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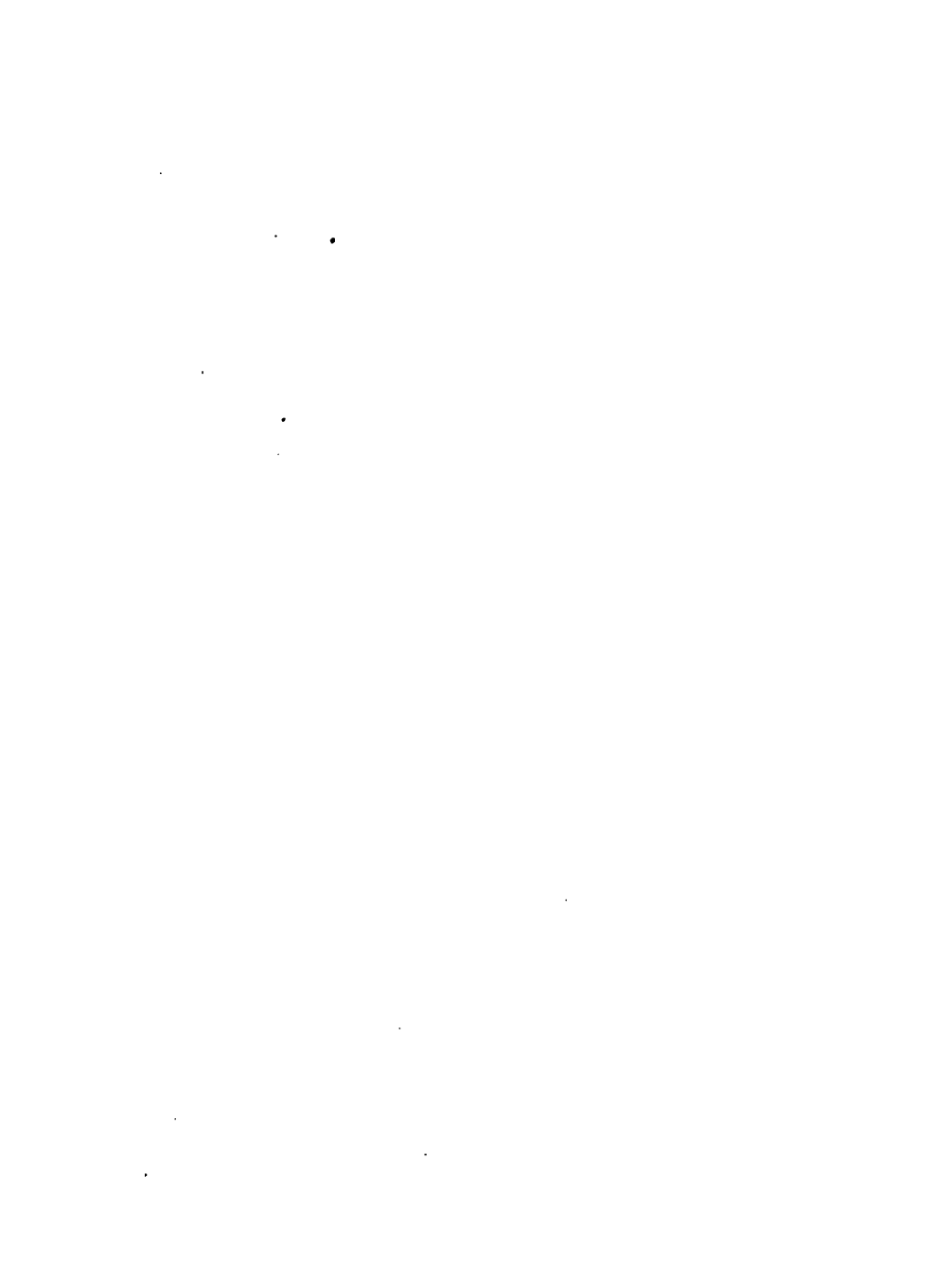
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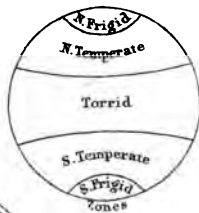
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MODERN GEOGRAPHY.

INTRODUCTION.

GEOGRAPHY is a description of the Earth, its form, magnitude, and motions; its natural and political divisions; its productions; and its inhabitants.

The form of the Earth is nearly that of a globe or sphere; its equatorial exceeding its polar diameter by about $26\frac{1}{4}$ miles.

The mean diameter of the Earth is 7912 miles; its circumference, 24,856 miles; its superficial extent, nearly 197 millions of square miles.

The Earth has two motions,—a yearly motion round the sun, which produces the seasons, and the difference in the lengths of days and nights; and a daily motion on its own axis, which is the cause of day and night.

The Earth's axis is an imaginary line passing through its centre, and terminating at the north and south poles.

The Equator is a great circle, every point in which is equally distant from the poles. It divides the globe into northern and southern hemispheres.*

* Every circle is divided into 360 equal parts, called degrees; each degree into 60 equal parts, called minutes; and each minute into 60 equal parts, called seconds. The marks indicating these are " ' " ; thus $25^{\circ} 6' 15''$, means 25 degrees 6 minutes, 15 seconds. A degree on the equator, or any other great circle, is equal to 60 geographical, or about $69\frac{1}{2}$ English miles.

Latitude is the distance of a place to the north or south of the Equator ; hence all circles parallel to the equator are called parallels of latitude. Among these the Arctic and Antarctic or Polar Circles, the Tropic of Cancer, and the Tropic of Capricorn, are the most remarkable.

Meridians are lines drawn from pole to pole.

Longitude is the distance of a place to the east or west of the first meridian. The First Meridian, from which British geographers reckon, is that which passes through the Royal Observatory at Greenwich.

The Tropic of Cancer is about $23\frac{1}{2}$ degrees north from the equator, and the Tropic of Capricorn the same distance south from the equator. The Arctic Circle is about $23\frac{1}{2}$ degrees from the north pole, and the Antarctic the same distance from the south pole.

The spaces between the two poles and the polar circles are called the Frigid Zones ; the spaces between the polar circles and the tropics, the Temperate Zones ; and the space between the tropics, the Torrid Zone.

The Zenith is that point in the heavens which is directly above us, and the Nadir is that point in the heavens exactly opposite to it.

The Sensible Horizon is that circle which bounds our view, and where the sky and the water, or earth, seem to meet. The Rational Horizon is a circle whose plane passes through the centre of the earth, and is parallel to the sensible horizon.

A map represents, on a flat surface, the whole or any portion of the globe. The top of a map is north ; the bottom, south ; the right-hand side, east ; the left-hand side, west. In maps of the world, the longitude is marked on the equator, and the latitude on the circles which surround the two hemispheres ; but in maps representing only a portion of the earth's surface, the

longitude is marked at the top and bottom, and the latitude at the sides.

The surface of the earth consists of land and water, the water occupying more than two-thirds of the whole surface.

The divisions of the land are continents, countries, islands, peninsulas, isthmuses, promontories, capes, and coasts or shores. The divisions of the water are oceans, seas, archipelagoes, gulfs, bays, creeks, straits, channels, estuaries or friths, lakes, and rivers.

A Continent is a large portion of the earth, comprehending several countries. A Country is a smaller portion of land, with a particular name, people, or government. An Island is a portion of the earth wholly surrounded by water. A Peninsula is a portion of land almost surrounded by water. An Isthmus is a narrow neck of land, between two seas, joining two larger portions of land together. A Promontory, Cape, Point, Head, Naze, Ness, or Mull, is the extremity of a portion of land stretching into the sea. A Coast or Shore is that part of the land which borders on the sea.

An Ocean is a very large expanse of salt water. A Sea is a smaller part. An Archipelago is a sea studded with islands. A Gulf is a portion of sea nearly surrounded by land. A Bay is a part of the sea running into the land, with a wider opening than a gulf. A Creek is a still narrower portion of sea running into the land. A Strait is a narrow passage uniting two seas. A Channel is wider and longer than a strait. An Estuary or Frith is the widening of a river into an arm of the sea. A Lake is a collection of water surrounded by land. A River is a stream of fresh water running into the sea, a lake, or a larger river.

The chief political divisions of the Earth are Empires, Kingdoms, and Republics. An Empire generally con-

sists of several states or countries, governed by a sovereign, who is usually styled an Emperor. A Kingdom is a country governed by a King or Queen. A Republic is a country governed by Rulers elected by the people.

GENERAL VIEW OF THE EARTH.

DIVISIONS.—The Continents of EU'ROPE; A'SIA; AFRICA; NORTH AMER'ICA, and SOUTH AMERICA; OCEAN'IA, comprising MALAY'SIA, AUSTRALA'SIA, and POLYNE'SIA.

OCEANS.—The Atlan'tic, the Pacific, the In'dian, the Northern or Arctic, and the Southern or Antarctic.

The population of the Earth is estimated by the latest and best authorities at nearly 1350 millions; of whom there are 285 millions in Europe, $798\frac{1}{2}$ millions in Asia, 188 millions in Africa, $74\frac{1}{2}$ millions in America, and 4 millions in Oceania. About 380 millions are of the Caucasian or white race, 557 millions of the Mongolian or brown race, 216 millions of the Malay or tawny race, 196 millions of the Negro or black race, and 1 million of the American-Indian or copper-coloured race. There are about 365 millions of Christians, 7 millions of Jews, 167 millions of Mohammedans, 205 millions of Heathens or Pagans, and 606 millions of Buddhists.

EXERCISES.—What is Geography? Of what form is the earth? How much does its equatorial exceed its polar diameter? What are its mean diameter, circumference, and superficial extent? How many motions has the earth, and what are they? What does its yearly motion round the sun produce? Of what is its daily motion on its own axis the cause? What is the earth's axis? What is the equator? How does it divide the globe? What is latitude? Name the most remarkable parallels of latitude? What are meridians? What is longitude? What is the first meridian, from which British

geographers reckon? How many degrees are the tropics from the equator? How many degrees are the arctic circle from the north, and the antarctic from the south pole? Where are the frigid, temperate, and torrid zones situated?

What are the zenith and nadir? What are the sensible and rational horizons? What does a map represent? What are the north, south, east, and west of a map? How are longitude and latitude marked on maps? Of what does the surface of the earth consist? What are the divisions of land, and what those of water? What is a continent? a country? an island? a peninsula? an isthmus? What is a promontory, cape, etc.? What is a coast or shore? Describe an ocean, a sea, an archipelago, a gulf, a bay, a creek, a strait, a channel, an estuary or frith, a lake, a river. Into what is the earth politically divided? Describe these divisions. Name, and point out on the map, the great divisions of the earth. Name its oceans, and point them out. What is the amount of its population? How many millions of people are there in each of the great divisions of the earth? How many millions in each of the great races of mankind? How many millions are there of Christians? of Jews? of Buddhists? of Mohammedans? of Heathens?

EUROPE

Is bounded on the N. by the Arctic Ocean; W. by the Atlantic Ocean; S. by the Mediterranean, the Archipelago, the Sea of Marmora, the Black Sea, and the Caucasus Mountains; E. by the Caspian Sea, the River Ural, and the Ural Mountains.

COUNTRIES.—THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND (containing ENGLAND, SCOTLAND, and IRELAND, with their neighbouring islands); PORTUGAL; SPAIN; FRANCE; SWITZERLAND; BELGIUM; HOLLAND; DENMARK; NORWAY; SWEDEN; RUSSIA; PRUSSIA; ITALY; TURKEY; GREECE; AUSTRIA; GERMANY.

SEAS AND GULFS.—Mediterranean Sea, Gulfs of Lyons, Genoa, and Taranto, Gulf of Venice or Adriatic Sea, Archipelago, Sea of Marmora, Black Sea, Sea of Azoph, Bay of Biscay, English Channel, St George's Channel, Irish Sea, North Channel, German Ocean or

North Sea, Ska'ger Rack, Cat'tegat, Bal'tic Sea, Gulfs of Ri'ga, Fin'land, and Both'nia, White Sea.

ISLANDS.—Great Britain, Ireland, Fa'roe Islands, Ice'land, Spitzber'gen, No'va Zem'bla, Zea'land, Fu'nen, Laa'land; Can'dia, Ne'gropont, and many others in the Archipelago; Io'nian Islands; Si'cily, Mal'ta, Cor'sica, Sardin'ia, Major'ca, Minor'ca, Iv'iça, Azores'.

STRAITS.—Caf'fa or Enik'ale, Constantino'ple, Dardan-elles' or the Hel'espont, Messi'na, Bonifa'cio, Gibral'tar, Do'ver, the Sound, Great Belt, Little Belt, Wai'gatz.

ISTHMUSES.—Cor'inth, Per'ecop.

PENINSULAS.—Spain and Portugal, Norway and Swe-den, the More'a, the Crime'a, Jut'land.

CAPIES.—North Cape, Naze, Skaw, Dun'net Head, Cape Clear, Land's End, Cape La Hogue, Or'tegal, Finisterre', St Vin'cent, Spartiven'to, Matapan'.

MOUNTAINS.—Pyrenees', Alps, Ap'ennines, Bal'kan, Carpa'thian, Dov'refield, Ko'len, Ural.

VOLCANOES.—Et'na, Vesu'vius, Strombo'li, Hec'la.

RIVERS.—Vol'ga or Wol'ga, Dnie'per, Don, Dan'u'be, Vis'tula, O'der, Elbe, Rhine, Loir'e, Seine, Rhone, Po, E'bro, Ta'gus, Thames.

LAKES.—Lado'ga, One'ga, Wen'er, Wet'ter, Con'-stance, Gene'va.

Europe is situated between 36° 21' and 71° 10' N. Lat., and between 9° 30' W. and 68° E. Long., exclusive of the islands. Its greatest length from W. to E. is 3370 miles; its greatest breadth from N. to S., 2400 miles; its superficial extent, about 3,800,000 square miles.

Europe, though the smallest of the great divisions of the earth, is the second in population, and by far the most important. In power, civilisation, literature, arts, science, manufactures, and commerce, its inhabitants are greatly superior to those of any other portion of the globe.

The Christian religion, in one or other of its forms, sheds its benignant and civilizing influence over the whole of Europe, with the exception of Turkey, where Mohammedanism prevails,

although even there a great number of the inhabitants profess Christianity. Education, though not so forward in some states as in others, is everywhere attended to with more or less solicitude.

The governments of most of the principal states are limited monarchies.

The population is estimated at 285,000,000.

EXERCISES.—Name the boundaries of Europe. What countries does it contain? Point them out on the map. Which is the largest country in Europe? Name the country north of Greece? What two countries are in the south-west? Where is the White Sea? the Mediterranean? the Bay of Biscay? the Irish Sea? the Gulf of Riga? the English Channel? the Gulf of Lions? the Sea of Azoph? the German Ocean or North Sea? the Sea of Marmora? the Black Sea? the Cattegat? the Archipelago? Where is Nova Zembla? the Azores? Iceland? Malta? Name the three islands east of Spain; the island north of Malta. Where is Candia? Corsica? Name the island south of Corsica. Where are the Straits of Caffa? Dover? Bonifacio? Constantinople? the Sound? the Dardanelles? Messina? What straits unite the Mediterranean with the Atlantic? Which is the largest island of Europe?

Where is the isthmus of Corinth? the Morea? Cape Matapan? North Cape? St Vincent? Land's End? Dunnet Head? Skaw? Cape Ortegal? Cape Spartivento? the Naze? Where are the Ural Mountains? the Pyrenees? Dovrefield? the Alps? Balkan? the Carpathians? the Apennines? Name the volcano in Sicily. Where are Hecla? Vesuvius? Stromboli? In what direction, through what country or countries, and into what sea or gulf, does the Volga flow? the Rhone? the Thames? the Oder? the Po? the Don? the Ebro? the Dnieper? the Loire? the Tagus? the Danube? the Seine? the Vistula? the Rhine? the Elbe? In what country are Lakes Wener and Wetter? Ladoga and Onega? Where is the lake of Geneva? of Constance?

Between what degrees of latitude and longitude is Europe situated? What are its length, breadth, and superficial extent? What rank does it hold in extent and importance? In what are its inhabitants greatly superior to those of any other portion of the earth? What is the estimated population of Europe?

ASIA

Is bounded on the N. by the Arctic Ocean; W. by the Ural Mountains, the River Ural, the Caspian Sea, the Caucasus Mountains, the Black Sea, the Sea of Marmora,

the Archipelago, the Mediterranean, the Isthmus of Su'ez and the Red Sea; S. by the In'dian Ocean; E. by the Pacific Ocean.

COUNTRIES.—TURKEY in ASIA; ARA'BIA; PER'SIA; AFFGHAN'ISTAN; BELOOCH'ISTAN; HINDOSTAN'; the EASTERN PENINSULA; the CHINESE' EMPIRE, comprehending CHI'NA PROPER, MANDCHOO'RIA, MONCO'LIA, and TIBET'; CORE'A; JAPAN'; EASTERN TURKESTAN'; WESTERN TURKESTAN; ASIATIC RUSSIA; OCEAN'IA, comprehending MALAY'SIA, AUSTRALA'SIA, and POLYNE'SIA.

SEAS AND GULFS.—Levant, Red Sea, Arabian Sea, Persian Gulf, Bay of Bengal', Chinese Sea, Gulf of Siam', Gulf of Tonquin', Bay of Nankin', Whanghay' or Yellow Sea, Gulf of Core'a or Sea of Japan, Sea of Ochotsk', Sea of Kamtschat'ka, Cas'pian Sea, Sea of A'ral.

ISLANDS.—Cy'prus, Ceylon', Suma'tra, Ja'va, Bo'rneo, Ce'lebes, the Moluc'cas, the Phil'ippine Islands, Japan Islands, Ku'rile Islands, Aleu'tian Islands, besides numerous groups in the Southern Pacific, comprehended under the general divisions of Australasia and Polynesia.

STRAITS.—Bab-el-man'deb (Gate of Tears), Or'mus, Palk's Passage or Straits of Manaar', Malac'ca, Sun'da, Macas'sar, Tor'res, Bass, Beh'ring.

ISTHMUS.—Suez.

PENINSULAS.—Arabia, Malacca, Corea, Kamtschatka.

CAPIES.—Sev'ero, Com'orin, Negra'is, Roma'nia, Cambo'dia, Lopat'ka, East Cape.

MOUNTAINS.—Ural, Cau'casus, Tau'rus, Leb'anon, Ar'arat, Si'nai, Ho'reb, Eastern and Western Gauts, Him'maleh, Alta'ian.

RIVERS.—Euphra'tes, Ti'gris, In'dus, Gan'ges, Brahmapoo'tra, Irrawa'dy, Maykaung', Yang-tse-kiang', Hoang-ho', Amur' or Saga'lien, Le'na, Yen'isei, O'by, Ural, Gi'hon or Amoo', Sirr-Daria.

LAKES.—Bai'kal, Bal'kash, the Dead Sea.

Asia is situated between $1^{\circ} 20'$ and $78^{\circ} 25'$ N. Lat., and between 26° E. and 170° W. Long. Its greatest length from W. to E. is about 6000 miles; its greatest breadth from N. to S. about 5400 miles; its superficial extent, about 17,500,000 square miles.

Asia is by far the largest division of the earth, and in many respects it is the most interesting. Here man was created; and here in process of time his species multiplied and spread abroad over the whole earth. It was here that the Almighty set apart a people peculiar to himself; and here the advent, sufferings, death, and resurrection of the Messiah, triumphantly accomplished the salvation of mankind.

The prevailing religions of Asia are the Buddhist, Brahminical, and Mohammedan. There are, however, many Christians and Jews. Education is not attended to with anything like the care bestowed upon it in Europe.

The governments of Asia are mostly absolute despotisms.

The population, including that of Oceania, is estimated at 802,500,000.

EXERCISES.—Name the boundaries of Asia. What countries does it contain? Point them out. What are the two most westerly? Which is the most northerly? What countries border on Hindostan? Where is the Sea of Aral? the Red Sea? the Caspian Sea? the Chinese Sea? the Sea of Ochotsk? Whanghay or the Yellow Sea? the Levant? the Bay of Bengal? Where are the Japan Islands? Cyprus? Sumatra? Celebes? Name the island west of Celebes. What straits separate Asia from North America? Where are the straits of Ormus? Bab-el-mandeb? Malacca? Torres? Sunda? What two great divisions of the earth does the Isthmus of Suez unite?

Name the principal peninsulas of Asia, and tell how they are situated. Where is Cape Comorin? Severo? Romania? East Cape? Negrais? Lopatka? Where are the Ural Mountains? the Altaian? Sinai and Horeb? Taurus? What range of mountains separates Tibet from Hindostan? Where is Lebanon? Through what country does the Tigris flow? In what direction, through what country or countries, and into what sea or gulf does the Euphrates flow? the Gihon or Amoo? the Indus? the Ural? the Ganges? the Maykaung? the Yang-tse-kiang? the Amur or Sagalien? the Brahmapootra? the Yenisei? the Ob? Where is Lake Baikal? Lake Balkash? the Dead Sea?

Between what degrees of latitude and longitude is Asia situated? What are its length, breadth, and superficial extent? In what respects is it the most interesting division of the earth? What is the estimated population?

AFRICA

Is bounded on the N. by the Mediterranean; W. by the Atlantic Ocean; S. by the Southern Ocean; E. by the Indian Ocean, the Red Sea, and the Isthmus of Suez.

COUNTRIES.—NORTHERN AFRICA or BAR'BARY (comprehending MOROC'CO and FEZ, ALGIERS' or ALGE'RIA, TU'NIS, TRIP'OLI, and BAR'CA); WESTERN AFRICA; SOUTHERN AFRICA; EASTERN AFRICA; CENTRAL AFRICA; NORTH-EASTERN AFRICA (including ABYSSIN'IA, NU'BIA, and E'GYPT).

GULFS AND BAYS.—Guin'ea, Saldan'ha, Table, False, Algo'a, Delago'a, Sofa'la, Red Sea, Gulfs of Sy'dra and Ca'bes.

ISLANDS.—Madei'ras, Cana'ries, Cape Verde Islands, St Matthew, St Thomas, Fernan'do Po, Ascension, St Hele'na, Madagas'car, Com'oro Isles, Reun'ion (or Bourbon'), Mauri'tius, Seychelles' Islands, Soco'tra.

STRAITS.—Gibraltar, Channel of Mozambique', Bab-el-mandeb.

ISTHMUS.—Suez.

CAPIES.—Bon, Spar'tel, Bojador', Blan'co, Verde, Rox'o, Pal'mas, Three Points, Formo'sa, Ne'gro, Good Hope, Corrien'tes, Delga'do, Guar'dafui.

MOUNTAINS.—At'las, Sier'ra Leo'ne, Kong, Camerouns', Table Mountain, Lupa'ta, Kiliman'jaro and Ke'nia (near the equator), Mosam'ba Mountains, Abyssin'ian Mountains, Peak of Teneriffe' (in the Island of Teneriffe, one of the Canaries).

RIVERS.—Sen'egal, Gam'bia, Ni'ger or Jol'iba or Quor'ra, Rio Grande, Agobay', Con'go or Zaire, Or'ange, Kasai' or Kassa'vi, Ol'iphant, Zambe'zi, Sha'ry, Nile.

LAKES.—Tchad, Dem'bea, Victo'ria-Nyan'za, Al'bert-Nyan'za, Mara'vi, Nga'mi, Tanganyi'ka, Nyanyi'zi-Nyas'sa, Shir'wa.

Africa is situated between $37^{\circ} 20' N.$ and $34^{\circ} 50' S.$ Lat., and between $17^{\circ} 30' W.$ and $51^{\circ} 22' E.$ Long. Its greatest length from N. to S. is about 5000 miles; its greatest breadth from W. to E., about 4700 miles; its superficial extent, about 11,870,000 square miles.

Africa is the third division of the globe in point of extent, but the lowest in importance. A great part of the interior is still unexplored. Abyssinia, Nubia, Egypt, and the whole coast of the Mediterranean, reached, in ancient times, a high state of civilisation, but nearly the whole continent is now sunk in barbarism.

The prevailing religions are Mohammedanism and Idolatry.

Every kind of government exists in Africa; but that prevalent in the native states is the most absolute and degrading despotism.

The population is estimated at 188,000,000.

EXERCISES.—Name the boundaries of Africa. What are its countries? Point them out. Where is the Red Sea? the Gulf of Guinea? Table Bay? Name the two gulfs on the north of Africa; the three bays on the south-east. Where are the Cape Verde Islands? the Mauritius? the Madeiras? Socotra? St Helena? the Canaries? Madagascar? Reunion? Ascension? Where is the channel of Mozambique?

Where is the Cape of Good Hope? Name the most easterly cape of Africa. Where are Capes Verde and Roxo? Three Points? Blanco? Bon? Corrientes? Bojador? Where are the Atlas Mountains? Peak of Teneriffe? Lupata? Kilimanjaro and Kenia? Mosamba? Sierra Leone? In what direction do the Senegal and Gambia flow, and into what do they fall? Through what countries does the Nile flow? Into what does the Niger fall? Where is the source of the Kasai or Kassavi? Where are the Orange and Oliphant? The Agobay and Zambezi? Where is Lake Maravi? Victoria-Nyanza? Tanganyika? Nyanyizi-Nyassa? Dembea? Tchad? Shirwa?

Between what degrees of latitude and longitude is Africa situated? What are its length, breadth, and superficial extent? What rank does it hold in extent and importance? What portion is still unexplored? What parts were, in ancient times, in a high state of civilisation? In what state is nearly the whole continent now? What is the estimated population?

AMERICA

Is divided into two parts, viz., NORTH and SOUTH AMERICA.

NORTH AMERICA

Is bounded on the N. by the Arctic Ocean; W. by the Pacific; S. by the Pacific, the Isthmus of Da'rien, the Gulf of Mexico, and the Caribbe'an Sea; E. by the Atlantic Ocean.

DIVISIONS.—BRITISH AMERICA; DANISH AMERICA (Greenland); UNITED STATES (with ALIAS'KA*); MEXICO; CENTRAL AMERICA; WEST INDIA ISLANDS.

BAYS AND GULFS.—Bris'tol, Cook's Inlet, Nootka Sound, Gulf of Georgia, Queen Charlotte's Sound, Gulf of California, Hondu'ras, Mexico, Campeach'y, Flor'ida, Ches'apeake, Del'aware, Fun'dy, St Law'rence, Hud'son's Bay, James' Bay, Baf'fin's Bay, Gulf of Booth'ia, Prince Regent's Inlet, Coronation Gulf.

ISLANDS.—Newfound'land, Cape Bret'on, Prince Edward, the Bermu'das, Green'land, Southamp'ton, North Geor'gian or Par'ry's Islands, Banks Land, Cockburn Island, Queen Charlotte's Isles, Vancou'ver.

STRAITS.—Belleisle', Hudson's Straits, Da'vis' Straits, Lancaster Sound, Bar'row's Straits, Mel'ville Sound, Banks Strait, Prince Regent's Inlet, Behring's Strait.

PENINSULAS.—No'va Sco'tia, Alias'ka, Lower California, Yu'catan, Florida.

CAPIES.—St Lu'cas, Catoche' or False Cape, Sa'ble or Tan'cha, Florida, Cod, Sable, Ray, Race, Charles, Chid'ley, Farewell, Icy Cape, Cape Prince of Wales.

MOUNTAINS.—Rocky Mountains, St Eli'as, Fairweather, Mexico, Appala'chian or Al'leghany Mountains.

* Aliaska, formerly known as Russian America, was ceded in 1867 to the United States of America for seven million dollars (about £1,439,000 sterling).

RIVERS.—Mississip'pi, Missou'ri, Arkan'sas, Red River, Ohí'o, St Law'rence, Back or Great Fish River, Macken'zie, Cop'permine, Or'egon or Colum'bia, Fra'zer, Colora'do, Ri'o Grande del Nor'te.

LAKES.—Supe'rior, Mi'chigan, Hu'ron, E'rie, Onta'rio, Champlain', Mistas'sin, Win'nipeg, Athabas'ca, Great Slave Lake, Great Bear Lake, Great Salt Lake, Nicarag'ua.

North America is situated between 82° and 8° 40' N. Lat., and between 20° and 168° W. Long. Its greatest length from N. to S. is about 5600 miles; its breadth from E. to W., about 3000 miles; its superficial extent, about 8,600,000 square miles.

North America was discovered by Cabot in 1497, or five years after Columbus discovered the West Indies.

The native tribes, now comparatively few in number, are mostly idolaters. The other inhabitants, forming the great bulk of the population, profess Christianity. Education is in general carefully attended to.

With the exception of the British and Danish possessions, all the governments are Federal Republics.

The population is about 52,671,540.

EXERCISES.—How is North America bounded? Name its divisions, and point them out. Which is the most southerly? the most westerly? Where are Bristol Bay and Cook's Inlet? the Gulf of Georgia, and Queen Charlotte's Sound? Baffin's Bay? the Gulf of Boothia? Chesapeake and Delaware Bays? the Gulf of Mexico? Fundy Bay? Where is Newfoundland? Queen Charlotte's Isles? Banks Land? Cockburn Island? Southampton? Prince Edward? Vancouver? Where are the Straits of Belleisle? Hudson's? Barrow's? Davis? Lancaster Sound? Melville Sound? Where is the peninsula of Alaska? Florida? California? Nova Scotia?

Where is Cape Cod? St Lucas? Icy Cape? Farewell? Race? Cape Prince of Wales? Chidley? Tancha? Name the mountains in the United States. Where are Mounts St Elias and Fairweather?

In what direction, and into what does the Mississippi flow? the Missouri? Ohio? St Lawrence? Arkansas? Colorado? Coppermine? the Oregon? the Frazer? Name the lakes that lie between the United States and Canada. Which is the largest? Out of which does the St Lawrence flow? In what country is Lake Nicaragua? Where is Great Bear Lake? Michigan?

Between what degrees of latitude and longitude is North America situated? What are its length, breadth, and superficial extent? By whom, and in what year, was North America discovered? What is its population?

SOUTH AMERICA

Is bounded on the N. by the Caribbean Sea; W. by Cos'ta Rí'ca and the Pacific; S. by the Southern Ocean; E. by the Atlantic.

COUNTRIES.—COLOM'BIA or NEW GRAN'ADA; VENEZUE'LA; ECUA'DOR; GUIAN'A; BRAZIL'; PERU'; BOLIV'IA or UPPER PERU; PAR'AGUAY; UR'UGUAY or the BAN'DA ORIEN'TAL; LA PLA'TA or the AR'GENTINE REPUBLIC; CHI'LI; PATAGO'NIA.

BAYS AND GULFS.—Venezuela or Maracay'bo, Darien, Panama', Buenaventu'ra, Guayaquil', St George, St Matthí'as, All Saints.

ISLANDS.—Gallipa'gos, Ju'an Fernan'dez, Chi'loè, Tier'ra del Fue'go, Sta'ten Land, Falk'land Islands, South Geor'gia, South Shet'land, South Ork'ney, Joan'es or Mara'jo, Trinida'da, Margari'ta.

STRAITS.—Magel'an, Le Maire.

ISTHMUS.—Da'rien or Panama'.

CAPIES.—Horn, Anto'nio, Mary, Fri'o, Roque.

MOUNTAINS.—An'des or Cordille'ras (the highest of which are Aconcag'ua in Chili, Sora'ta, Illima'ni, and Chimbor'a'zo); Pa'rimè Mountains; Mountains of Brazil.

RIVERS.—Magdale'na, Orino'co, Essequi'bo, Am'azon or Ma'anon, Madei'ra, Negro, Tocan'tin, San Francis'co, Para'na, Paraguay, Uruguay, La Pla'ta, Colora'do.

LAKES.—Maracaybo, Titica'ca.

South America is situated between 11° 20' N. and 56° S. Lat., and between 35° and 83° W. Long. Its length from N. to S. is about 4500 miles; its breadth from E. to W., about 3000 miles; its superficial extent, about 7,000,000 square miles.

South America was discovered by Columbus in his third voyage in 1498. Civilisation had attained a considerable height in Mexico and Peru when they were first visited by the Spaniards.

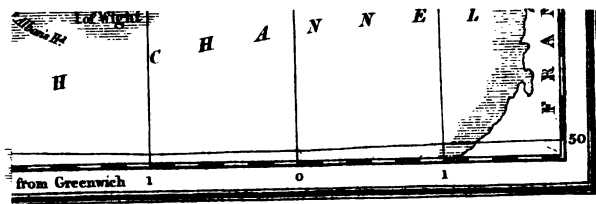
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GEOGRAPHY, BY J. GELLATLY, EDIN⁸

but the native population soon sunk under the tyranny and rapine of the invaders.

The Roman-catholic religion is prevalent in all the states; education is in general little attended to.

All the states are Republics except Brazil and Patagonia.

The population is estimated at 22,000,000.

EXERCISES.—How is South America bounded? What countries does it contain? Point them out. Which is the largest country? the most northerly? the most southerly? What countries border on Brazil? Where is the Bay of All Saints? of Panama? St George? St Matthias? Where is the Gulf of Darien? Guayaquil? Maracaybo? What great circle passes through the Gallipagos Islands? Where is Juan Fernandez? Falkland Islands? Trinidad? Margarita? Staten Land? Chiloe? Joannes or Marajo? Tierra del Fuego? Where are the Straits of Magellan? Le Maire? What isthmus unites North and South America? Where is Cape Horn? Roque? Antonio? Frio? Mary? Which is the highest of the Andes? How does the Amazon flow? Into what does it fall? Describe the course of the Magdalena; Francisco; Essequibo; Colorado; Orinoco? Where is Lake Maracaybo? Titicaca?

Between what degrees of latitude and longitude is South America situated? What are its length, breadth, and superficial extent? By whom was it discovered, and when? What is the population of South America?

THE BRITISH EMPIRE.

ENGLAND AND WALES

Are bounded on the N. by Scotland; W. by St George's Channel and the Irish Sea; S. by the English Channel; E. by the German Ocean.

ENGLAND is divided into forty counties, viz. :—

Northumberland, Cumberland, Westmoreland, Durham, York, Lancashire, Cheshire, Derby, Nottingham or Notts, Lincoln, Rutland, Leicester (Lester), Stafford, Shropshire or Salop, Hereford, Worcester (Wooster), Warwick, Northampton, Huntingdon, Cambridge, Norfolk, Suffolk, Essex, Hertford or Herts, Bedford, Buckingham or Bucks, Oxford, Gloucester (Gloster),

Mon'mouth, Som'erset, Wilt'shire, Berk'shire, Mid'dlesex, Sur'rey, Kent, Sus'sex, Hamp'shire, Hants or Southamp'ton, Dor'set, Dev'on, Corn'wall.

WALES is divided into twelve counties, viz. :—

Flint, Den'high, Carnarvon, An'glesea, Mer'ioneth, Montgom'ery, Rad'nor, Car'digan, Breck'nock, Glamor'gan, Carmarthen, Pem'broke.

BAYS AND STRAITS.—Robin Hood's Bay, Brid'lington Bay, Hum'ber Mouth, The Wash, Yar'mouth Roads, The Downs, Straits of Do'ver, Spit'head, Torbay', Mount's Bay, Bris'tol Channel, Swan'sea Bay, Carmarthen Bay, Mil'ford Haven, St Bride's Bay, Cardigan Bay, Carnarvon Bay, Me'nai Strait, More'cambe Bay, Sol'way Frith.

ISLANDS.—Isle of Man 52,* the diocese of the Bishop of Sodor and Man (with the towns of Doug'las 10, Cas'tleton, Ram'sey, and Peel); Anglesea 54; Lun'dy, the site of a lighthouse; Scil'ly Isles, the chief of which is St Mary's; Isle of Wight 50, in which are New'port 8, and Cowes: near the coast of France are, Jersey 57, in which is St He'lier 29; Guernsey 30, in which is St Pierre' 17; Sark; Al'derney: Than'et; Shep'pey; Foulness; Coq'uet; Holy Island or Lin'disfarne.

CAVES.—Flam'borough Head, Spurn Head, North Foreland, South Foreland, Dungeness', Beach'y Head, the Nee'dles, St Al'ban's Head, Port'land Point, Start Point, Liz'ard Point, Land's End, Hart'land Point, Worm's Head, St Gov'en's Head, St David's Head, Strum'ble Head, Hol'yhead, Great Orme's Head, St Bee's Head.

MOUNTAINS.—Che'viot Hills, Scafell', Skid'daw, Hel-

* The population of Great Britain and Ireland is according to the census of 1861. The figures at the end of counties and towns indicate the population to the nearest thousand; thus, 7348 is marked 7, and 7643 is marked 8 thousand. The population of towns under 5000 is not given.

vellyn, Bowfell, Whernside, Ingleborough, Penngent, the Peak of Derby, Snowdon, Berwyn, Arddan Fowddry (Vouthee), Ca'der I'dris, Plynlimmon, Wrek'in, Vann or Brecknock Beacon, Malvern, Cotswold, Mendip.

RIVERS.—Tyne, E'den, Wear, Tees, Yorkshire Ouse (formed by the union of the Swale and Ure), with its tributaries Derwent, Wharf, and Aire; Ribble, Mersey, Dee, Severn, Upper Avon, Lower Avon, Wye, Trent, Hum'ber (formed by the junction of the Ouse and Trent); With'am, Welland, Nen, Great Ouse, Thames, Medway, Itchen, Test, Southern Avon, Exe.

LAKES.—Derwentwater or Keswick Lake, Ullswater, Windermere, Writtleseamere, Bal'la.

PRINCIPAL TOWNS.—In NORTHUMBERLAND 343.—Newcastle 109, in the neighbourhood of great coal-mines, with an extensive commerce and various manufactures, particularly of lead, iron, glass bottles, crown and plate glass, etc.; North Shields and Tyne-mouth 34; Hexham 5, where a battle was fought between the houses of York and Lancaster in 1463, in which the Yorkists were victorious; Morpeth 14, with one of the largest cattle-markets in England; Alnwick 6, with a noble castle, the residence of the Dukes of Northumberland; Wool'er, near which is Flodden Field, where King James IV. of Scotland and most of his nobles were slain, 9th September 1513; Berwick 13, which is a county of itself.

CUMBERLAND 205.—Carlisle 29, a bishop's see; Whitehaven 19, with great coal-mines, some of which are 130 fathoms deep, and extend under the sea; Workington 6; Penrith 7; Wigton; Keswick, eight miles south of which is Seatal'lor Fell, famous for its plumbago (black-lead) mine.

WESTMORELAND 61.—Appleby; Kendal 12, noted for its woollen manufactures.

DURHAM 509.—Durham 14, a bishop's see, and the site of a university, founded in 1832: near this city is Neville's Cross, where King David II. of Scotland was defeated and taken prisoner in 1346; Sun'derland (including Bishop and Monk Wearmouth) 86, noted for its shipbuilding, and for an iron bridge of 237 feet span, and 100 feet in height; Stock'ton 10; South Shields 35; Dar'lington 11; Har'tlepool 12; Gateshead 34, a suburb of Newcastle.

YORK 2 millions 33 thousand.—York 45, an archbishop's see, with a beautiful cathedral; Leeds 207, famous for its woollen manufactures; Halifax 37, and Wake'field 23, manufacturing towns; Don'caster 16, noted for its races; Rip'on 6, a bishop's see; Shef'field 185, celebrated for its cutlery; Hull 99, one of the principal seaports in the kingdom; Scar'borough 18, a fashionable watering-place; Whitby 12; Hud'dersfield 34, Mid'dlesborough 35, and Brad'ford 106, manufacturing towns; Har'rogate, noted for its mineral waters.

LANCASHIRE 2½ millions.—Lan'caster 16, with a noble castle; Pres'ton 82, where the Jacobite insurgents surrendered at discretion in 1715; Black'burn 63, and Bol'ton 70, both important manufacturing towns; Man'chester 357, a bishop's see, Sal'ford 102, and Ac'cington 19, famous for their cotton manufactures, the greatest in the world; Liv'erpole 444, the second seaport in the kingdom; Bar'row-in-Furness 20, Old'ham 94, Ash'ton-under-Line 35, Wig'an 38, Roch'dale 38, Bur'y 38, and War'rington 27, all manufacturing towns.

CHESHIRE 505.—Ches'ter 31, a bishop's see; Stock'port 55, with flourishing manufactories; Mac'clesfield 36, noted for its silk manufactures; Cong'leton 12; North'wich, in the neighbourhood of which are extensive mines of rock-salt; Birk'enhead 52.

DERBY 339.—Derby 43, where the first silk mill in

Britain was erected in 1718; Ches'terfield 10, with silk and cotton manufactures; Bux'ton and Mat'lock, celebrated for their mineral waters; Bel'per 10.

NOTTINGHAM 294.—Nottingham 75, noted for its hosiery and lace: here King Charles I. raised his standard in 1642, at the commencement of the civil war; New'ark 12, where King John died, and King Charles I. delivered himself into the hands of the Scots; Mans'field 10, on the borders of Sher'wood Forest, famous for the adventures of Robin Hood.

LINCOLN 412.—Lincoln 21, a bishop's see, with a fine cathedral, in which is a large bell, called "Tom of Lincoln;" Gains'borough 8; Grant'ham 11; Bos'ton 18, with a fine parish church, and a great trade in corn; Stam'ford 8; Louth 10, with extensive manufactures of blankets and carpets; Great Grims'by 15.

RUTLAND 22.—Oak'ham; Up'pingham.

LEICESTER 237.—Leicester 68, noted for its manufactures of hosiery, cotton gloves, and lace; Lough'-borough 11, with extensive hosiery and lace manufactures; Har'borough; Bos'worth, near which, in 1485, was fought a battle between King Richard III. and the Earl of Richmond, afterwards King Henry VII., in which Richard was slain; Lut'terworth, where Wickliffe the reformer died; Mel'ton-Mow'bray, noted for its great cattle-market, and for its fox-hunting club; Hinck'ley 6.

STAFFORD 747.—Stafford 12, noted for its manufacture of shoes; Lich'field 7, a bishop's see, the birthplace of Dr Samuel Johnson in 1709, and of Bishop Newton in 1704; Wolverhamp'ton 148, noted for its iron manufactures; Newcastle-under-Line 13; Stoke-upon-Trent 101; Burs'lem 16, an early seat of the pottery manufactures; Bil'ston 24, near which are large mines of coal and iron; Bur'ton 8, celebrated for its ale; Wal'sall 38, noted for its saddlers' ironmongery.

SHROPSHIRE or **SALOP** 241.—Shrews'bury 22, where Henry Percy, surnamed Hotspur, was defeated and slain by King Henry IV. in 1403; Wel'lington 6, with extensive manufactures of nails; Lud'low 6; Bridge'north 8, noted for its fairs.

HEREFORD 124.—Hereford 16, a bishop's see; Leominster (Lem'ster) 6; Led'bury; Ross, the native town of John Kyrle, Pope's "Man of Ross."

WORCESTER 308.—Worcester 31, a bishop's see, famous for the manufacture of porcelain: here King Charles II. was defeated by Cromwell in 1651; Kid'derminster 15, noted for its carpet manufactures; Dud'ley 45, surrounded by Staffordshire; Droit'wich 7, famous for its salt springs; Stour'bridge 8, noted for its manufactures of hardware and glass.

WARWICK 562.—Warwick 11, with a fine castle; Strat'ford, where Shakspeare was born; Cov'entry 42, noted for its manufactures of watches and ribbons; Bir'mingham 296, famous for its hardware manufactures; Leam'ington 16, celebrated for its mineral waters.

NORTHAMPTON 228.—Northampton 33; Pe'terborough 12, a bishop's see: south-west of this town are the vestiges of Foth'eringay Castle, where King Richard III. was born in 1452, and where Mary Queen of Scots was beheaded in 1587; Dav'entry; Nase'by, where the Royalists were defeated by Cromwell in 1645.

HUNTINGDON 64.—Huntingdon 6, the birthplace of Oliver Cromwell, in 1599; St Ne'ot's; St Ives, with a large cattle-market; Stilton, noted for its cheese.

CAMBRIDGE 176.—Cambridge 26, with a famous university, containing fourteen colleges and three halls; E'ly 6, a bishop's see, with a noble cathedral; Newmarket, noted for its horse-races; Wis'beach 9.

NORFOLK 435.—Nor'wich 74, a bishop's see, and noted for the manufacture of crape; Yar'mouth 31, famous for

its herring fishery; Lynn Re'gis, or King's Lynn 16, with an extensive corn-trade; Thet'ford.

SUFFOLK 336.—Ips'wich 38, the birthplace of Cardinal Wolsey, in 1471; Bury St Ed'munds 13, with a large corn and cattle market; Wood'bridge 5; Sud'bury 7, with an extensive silk-manufactory.

ESSEX 405.—Chelms'ford 6; Col'chester 24, famous for its oysters; Har'wich 5, a fortified seaport, and favourite place for bathing.

HERTFORD or HERTS 173.—Hert'ford 7, with a large corn-market; Ware 5, noted for its trade in malt; St Al'ban's 8, where the celebrated Lord Bacon is buried.

BEDFORD 135.—Bedford 13; Duns'table, famous for the manufacture of straw-plait; Wo'burn, near which is Woburn Abbey, the splendid mansion of the Duke of Bedford; Lu'ton 15, noted for its straw-hats.

BUCKINGHAM 167.—Buckingham 8, near which is Stowe, the magnificent residence of the Duke of Buckingham; E'ton, celebrated for its public school or college; Ayles'bury 27, noted for its manufacture of thread lace; Great Mar'low 7; High Wy'combe 7.

OXFORD 172.—Oxford 28, a bishop's see, with a celebrated university, containing nineteen colleges and five halls; Hen'ley; Ban'bury 10; Wit'ney, noted for its manufacture of blankets; Wood'stock 8, famous for its manufacture of gloves: near it is Blen'heim, the magnificent mansion of the Duke of Marlborough.

GLOUCESTER 486.—Gloucester 16, a bishop's see, with a beautiful cathedral; Tewkes'bury 6, near which was fought, in 1471, a decisive battle between the houses of York and Lancaster; Chel'tenham 40, much frequented for its mineral waters; Bristol 154 (partly in Somersetshire), the third city in the kingdom for commerce; Stroud 36; Cirencester (Ci'cester) 6.

MONMOUTH 175.—Monmouth 6, the birthplace of King Henry V., in 1388; Chep'stow; Pon'typool, long noted for its japanned goods; New'port 23, with a great trade in iron and coal.

SOMERSET 445.—Bath 53, a beautiful city, celebrated for its medicinal waters; Wells, with a venerable cathedral; Bridge'water 11; Taun'ton 15; Frome 10, celebrated for its manufactures of woollen cloth; Wel'lington, from which the Duke of Wellington took his title.

WILTSHIRE 249.—Sal'isbury 12, a bishop's see, with a fine cathedral, the spire of which, 410 feet high, is the loftiest in the kingdom; Trow'bridge 10, with manufactures of cloth, etc.; Wil'ton 9, noted for its carpets; Brad'ford and Devi'zes 7, with considerable trade and manufactures; Marl'borough 5.

BERKSHIRE 176.—Reading 25, with a considerable trade in malt, corn, etc.; Wind'sor 10, with a magnificent castle, a favourite residence of the British sovereigns; Ab'ingdon 6; Wal'lingford 8, Sand'hurst, the seat of a royal military college.

MIDDLESEX 2½ millions.—Lon'don (including Westminster, Southwark, etc., 2,803,034), a bishop's see, the capital of the British empire, and the largest and wealthiest city in the world; Westminster 254, famous for its abbey, crowded with monuments of the illustrious dead: here the sovereigns of England are crowned; Brent'ford 9; Staines; Ux'bridge, with a great corn-market.

SURREY 831.—Guild'ford 8; King'ston 9; Croy'don 10, noted for its weekly corn-market; South'wark 193, and Lam'beth 298, both suburbs of London; Farn'ham, noted for the plantations of hops in its neighbourhood; Ep'som, famous for its races.

KENT 734.—Maid'stone 23, the chief seat of the hop-trade; Ro'chester 17, a bishop's see; Chat'ham 36, one

of the principal stations of the royal navy; Can'terbury 21, the archbishop of which is primate of all England; Dept'ford 28, with fine wet docks; Green'wich 139, famous for its hospital for seamen, and for its Royal Observatory, through which the first meridian passes; Wool'wich 32, celebrated for its royal military academy and arsenal; Graves'end 19, opposite to which is Til'bury Fort; Dover 25, the nearest port to France; Deal 8, where the Romans under Cæsar first landed; Rams'gate 12, and Mar'gate 9, favourite bathing-places; Tun'bridge with Tunbridge Wells 15, so called from its medicinal springs.

SUSSEX 364.—Chi'chester 8, a bishop's see; Bright'on 87, a favourite resort for sea-bathing; Lew'es 10; Hast'ings 23, where King Harold was defeated and slain by King William the Conqueror in 1066.

HAMPSHIRE, HANTS, or SOUTHAMPTON 481.—Win'chester 15, a bishop's see, with a famous public school; Southamp'ton 47, the port of arrival and departure of the Peninsular, Mediterranean, Oriental, and West Indian mails, with a magnificent harbour: here Dr Isaac Watts was born, in 1674; Ports'mouth 95, the principal harbour for the British navy; Gos'port 7, near which is the naval hospital of Haslar; Lym'ington 5, Christ'church 9.

DORSET 188.—Dor'chester 6, famous for its ale; Wey'mouth and Mel'combe Re'gis 11, much frequented for sea-bathing; Poole 10, with a good trade; Brid'port 8, noted for its shipbuilding; Bland'ford.

DEVON 585.—Ex'eter 42, a bishop's see; Plym'outh and Dev'onport 138, the second station in England for ships of war; Dart'mouth, with a considerable trade; Barn'stapse 11; Tav'istock 8, the birthplace of Sir Francis Drake, the first Englishman who sailed round the world; Torquay' 16, a favourite watering-place; Tiv'erton 10.

CORNWALL 369.—Launceston (Lan'ston) 5, Tru'ro 11, and Red'ruth 7, in the neighbourhood of extensive tin-mines; Falmouth 6, a mail-packet station, with a noble harbour; Penzance' 9, noted for its mild and salubrious air; St Ives 11, with an extensive pilchard fishery; Bod'min 6.

WALES.

FLINT 70.—Flint; St As'aph, a bishop's see; Hol'ywell 6, so called from St Winifred's well, with large copper-works; Mold.

DENBIGH 101.—Denbigh 6; Wrex'ham 7, with a considerable trade in flannel; Llangol'len 5, surrounded by picturesque and beautiful scenery; Ru'thin.

CARNARVON 96.—Carnarvon 9, with a stately castle, in which King Edward II. was born; Ban'gor 6, a bishop's see; Con'way, with the ruins of a noble castle.

ANGLESEA 55.—Beauma'ris; Hol'yhead 6, from which a mail-packet sails regularly to Dublin; Am'lwch, in the neighbourhood of which is a rich copper-mine.

MERIONETH 39.—Dolgel'ly; Har'leigh, with an ancient castle; Ba'la.

MONTGOMERY 67.—Montgomery, with the ruins of a castle built in the time of King William the Conqueror; Welch'pool, 7, with a great trade in flannels; Llanid'loes, and New'town 6, noted for their flannels.

RADNOR 25.—New Radnor; Pres'teign; Knight'on.

CARDIGAN 72.—Cardigan; Aberyst'with 5, a favourite resort for sea-bathing; Lam'peter, the site of St David's college, founded in 1822, for the education of the Welch clergy.

BRECKNOCK 62.—Brecknock or Bre'con 7; Builth; Hay.

GLAMORGAN 318.—Cardiff 32, with a castle in which Robert Duke of Normandy died after being confined twenty-six years by his brother King Henry I.; Landaff', a bishop's see, with the ruins of an ancient cathedral; Merthyr Tyd'vil 84, the largest town in Wales, with very extensive iron works; Swansea 43, with a great trade in coals, iron, and copper.

CARMARTHEN 112.—Carmarthen 10, a flourishing town; Kidwelly; Llanelli 9, with an extensive trade in copper and coals.

PEMBROKE 96.—Pembroke 15, near which are the ruins of a noble castle; Haverfordwest (Harfordwest) 7; St David's, a bishop's see; Milford, with a capacious harbour; Tenby, a favourite bathing-place.

ENGLAND is situated between 49° 58' and 55° 46' N. Lat., and between 1° 45' E. and 5° 40' W. Long. Its length, from Berwick to the coast of Dorsetshire, is 360 miles; its breadth, from the N. Foreland in Kent to the Land's End in Cornwall, 300 miles; its superficial extent, 58,320 square miles. The general aspect of the country is level, but the northern counties, and Wales especially, are mountainous, presenting many scenes of picturesque and romantic beauty.

As in most insular countries, the climate is humid and variable, but exempt from the extremes of heat and cold. The soil is in general fertile, and has been greatly improved by agricultural skill.

All the common species of grain are raised in abundance; in the southern counties hops are extensively cultivated, and in Devonshire the grape arrives at maturity in the open air. Most of the trees useful for their wood or bark, come to great perfection, as well as fruit-trees not requiring a tropical climate. The breeds of horses, cattle, sheep, and poultry, are superior to those of almost any other country; the English race-horse is unrivalled for its fleetness. Fish of all kinds are plentiful in the rivers and seas, and furnish not only an ample supply of food, but a valuable source of employment for a large class of the people. Coal of the best quality, and iron in almost inexhaustible quantities, are found in many parts of the country;

lead, tin, copper, rock-salt, plumbago, antimony, manganese, arsenic, slate, and limestone, are abundant.

The established religion is Protestant Episcopacy, but all other religious creeds are freely tolerated. Besides the great Universities of Oxford and Cambridge, one has lately been established in London, and one in Durham. There are colleges at St Bees in Cumberland, at Lampeter in Wales, at Birmingham, at Manchester, and other places. The Military Colleges of Woolwich, Sandhurst, and Wellington, are for the education of youths for the army. The manners of the people are open and frank; they are brave, honest, and proud of the free institutions of the country. Horse-racing, field-sports, and the theatre, are their chief amusements. In all departments of science and literature England can boast of great names; no country in the world, indeed, can number more illustrious sons than Bacon, Newton, Shakspeare, and Milton.

The government of Great Britain is a limited monarchy, consisting of a hereditary Sovereign, a hereditary House of Peers, and a House of Commons, composed of 658 representatives, chosen by the people. Of this number England and Wales return 493 members, Scotland returns 60, and Ireland 105. The House of Commons has the entire control of the public money and taxes. No money-bill can originate or be amended by the Peers; but they may reject the whole measure, should any of its clauses appear to them unjust or inexpedient.

The population of England and Wales in 1861 was 20,066,224, of whom 18,954,444 were in England, and 1,111,780 in Wales.

EXERCISES.—What are the boundaries of England and Wales? Into how many counties is England divided? Name the counties of Wales. Which is the most populous county in England? Which are the two most northern counties in England? Name the towns in Northumberland. What mountain is celebrated for its black-lead mine? What divides the south of Wales from England? What bay is to the south-west of Cornwall? Near what town is Flodden Field? In what year was a battle fought here? Who were slain in this battle? For what is Sunderland noted? Where was King David II. of Scotland taken prisoner? And in what year? What is the capital of England? On what river is it situated? Name some other towns on this river. For what is Manchester famous?

Near what town are there extensive mines of rock-salt? Name the principal towns in Derbyshire. What island is to the south of Hampshire? What bay separates it from that county? What *county in England* lies nearest to France? For what is Chester-

field noted? What occurred at Newark? Which is the largest county in England? On what river is Liverpool situated? Name the other towns on this river. For what is Nottingham noted? What took place there? Which is the second seaport in the kingdom? For what is Harrogate noted? Between whom was a battle fought at Bosworth? What was the result of this battle? Between what counties does the Wash lie? Name the chief rivers that flow into it. Where is Snowdon?

For what is Melton-Mowbray noted? What celebrated men were born at Lichfield? For what is Dunstable famous? Where is Lord Bacon buried? For what is Hertford noted? For what is Eton celebrated? What king was born at Monmouth? Between whom was a battle fought near Tewkesbury? For what is Bath celebrated? Mention two bays on the west of Pembroke. Where does the Severn rise? Through what counties does it flow? Name the counties which border on Wales? What isles are to the south-west of Cornwall? Name the largest. What are the principal towns in Yorkshire? Where is Bristol situated, and for what is it noted? For what is Salisbury noted? By whom, and in what year were the royalists defeated at Naseby?

For what is Coventry noted? What town is famous for its oysters? In what county is Yarmouth, and for what is it noted? Name the mountains in the north-west of Yorkshire. What two islands form part of Kent? What river is formed by the Yorkshire Ouse and the Trent? Name the counties which that river separates. On what river is Nottingham situated? Name a town on the Aire. On what river is Sheffield? In what county is Shrewsbury? Between whom, and in what year, was a battle fought there? For what is Leicester noted? In what county is Lutterworth? What celebrated person died here?

For what is Burton celebrated? Name the towns in Worcestershire. For what is Worcester famous? What county surrounds Dudley? Where was Shakspeare born? For what is Birmingham famous? Where was King Richard III. born? Who was beheaded at Fotheringay, and in what year? What town in Worcester is noted for the manufacture of hardware and glass? Name the towns in Cambridgeshire. For what is Cambridge famous? Between what counties are the lakes of Ullswater and Windermere? Where is Plynlimmon? What mountains separate Northumberland from Scotland? Through what counties does the Great Ouse flow? Name the town near its mouth. What capes are on the east of Kent? Where are Skiddaw and Scafell?

Where is the Solway Frith? Where was Cardinal Wolsey born? What town in Bedford is famous for the manufacture of straw plait? For what is Greenwich famous? Where did Julius Cæsar first land? For what is Woolwich celebrated? Where was Dr Isaac Watts born? For what is Oxford celebrated? Name the principal harbour of the British navy. What celebrated man was born at Tavistock? Name the towns in Cornwall. For what is Falmouth remarkable? For what is Penzance noted? In what county is Hastings? Between whom, and in what year, was a battle fought there? What town in Dorset is noted for shipbuilding?

Where is the second station in England for ships of war? For what is Berwick-upon-Tweed peculiar?

Name the principal river in Northumberland. Where are the Mendip Hills? What separates Anglesea from Carnarvon? Name the towns on the Medway. Describe the course of the Wye. What is the population of Bristol? of Birmingham? of York? of Newcastle-upon-Tyne? and of Liverpool? What town in Surrey is famous for its races? For what is Westminster famous? For what is Newport celebrated, and in what county is it? For what is Windsor remarkable? Name the towns in Berkshire. Where, and in what year, was Oliver Cromwell born? For what is Stilton noted? In what county is Preston, and what occurred there?

For what is Leeds famous? For what manufactures is Newcastle-upon-Tyne noted? Where, and in what year, was the first silk-mill in England erected? What counties border upon the English Channel? Name the counties that border upon the German Ocean? What counties are nearest to Scotland? Which is nearest to Ireland? Where are Yarmouth Roads? Where is Morecambe Bay? Name an island near the coast of Essex. On what river is Launceston situated? Name the towns on the river Tyne. Describe the course of the Dee. On what river is Preston situated? For what is Kidderminster noted? What town in Hertford is noted for its trade in malt? For what is Cheltenham frequented? Name the chief towns in Middlesex, and state their population.

For what is London remarkable? At what town in Flintshire are there large copper-works? What king was born at Carnarvon? For what are Llanidloes and Newtown noted? Which is the largest town in Wales? State its population. For what is Swansea noted? In what county is Llanelly? Name the towns in Pembrokeshire, and state their population. In what county is Amlwch, and what is in its neighbourhood? For what is Lampeter noted? In what county is Cardiff? What occurred in its castle? In what diocese is the Isle of Man? Name its chief towns. What island forms a county of Wales? Name the islands in the English Channel. In what island is St Helier? What is the chief town in Guernsey? What islands are near the coast of Northumberland? What county in England contains the fewest inhabitants? What is the population of Middlesex? What of Yorkshire?

Between what degrees of latitude and longitude is England situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Mention the chief vegetable productions. What are the chief domestic animals? Enumerate the chief mineral productions. What is the established religion? Name the universities and colleges. What are the manners of the people? What are their chief amusements? Has England produced many literary and scientific men? What is the government of Great Britain? How many members are sent to parliament by England and Wales? How many are sent by Scotland? How many by Ireland? What powers does the House of Commons possess? What power has the House of Peers? What is the population of England and Wales?

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SCOTLAND

Is bounded on the N. by the Atlantic Ocean; W. by the Atlantic Ocean; S. by England, the Sol'way Frith, and the Irish Sea; E. by the German Ocean.

It is divided into thirty-three counties, viz. :—

Ork'ney and Shet'land, Caith'ness, Suth'erland, Ross, Crom'arty, Inverness', Argyll', Nairn, Mor'ay or El'gin, Banff, Aberdeen', Kincardine or the Mearns, For'far or An'gus, Perth, Fife, Kinross', Clackman'nan, Stirling, Linlith'gow or West Lo'thian, Ed'inburgh or Mid Lothian, Had'dington or East Lothian, Ber'wick or the Merse, Rox'burgh or Te'viotdale, Sel'kirk, Pee'bles or Tweed'dale, Lan'ark or Clydes'dale, Dumbar'ton or the Len'nox, Ren'frew, Ayr, Dumfries', Kirkcudbright (Kirkcoo'-bree), Wig'town, Bute.

FRITHS, BAYS, and LOCHS (or arms of the sea).—Pent'land, Dor'noch, Cromarty, and Moray Friths; Friths of Tay, Forth, Solway and Clyde; Wigtown and Glenluce' Bays; Lochs Ry'an, Long, Fyne, Et'ive, Linnhe (Leen), Broom; the Minch; Kilbran'nan Sound; the Sounds of Isl'ay, Ju'ra, Mull.

ISLANDS.—The Shetland Islands, the chief of which are Main'land and Yell; the Orkney Islands, the chief of which are Mainland or Pomo'na and Hoy; the Heb'ridés or Western Islands, the chief of which are the Long Island (comprising the islands of Lew'is, North Uist, Benbec'ula, South Uist, Bar'ra, etc.); Skye, Rum, Eig, Mull, Coll, Tiree', Staffa (celebrated for its basaltic pillars and natural caverns, the largest of which has been called Fingal's Cave), Io'na or I'colmkill, an ancient seat of religion and learning; Jura, Islay; Bute and Ar'ran, in the Frith of Clyde; Inchcolm', Inchkeith', the Bass, and the May, in the Frith of Forth.

CAPIES.—St Abb's Head, Fifeness', Buchanness', Kinnaird's Head, Burgh Head, Tar'betness, Dun'cansbay Head, Dun'net Head, Strath'y Head, Cape Wrath, Butt of Lewis, Point of Ardnamur'chan, Mull of Cantire', Cor'sill or Fairland Point, Mull of Galloway, Bur'row Head, Saturnness' or Southernness.

MOUNTAINS.—Ben Wy'vis; Ben Ne'vis, the highest mountain in Great Britain; the Gram'pians, the principal of which are Ben Macdhu'í, Braeri'ach, Cairntoul', Cairngorm', Lochna'gar, Mount Bat'tock, Mount Keen, Schiehallion, Benigloe', Ben Law'ers, Ben Cru'achan, Ben More, Ben Vor'lich, Ben Led'i, and Ben Lo'mond; the O'chills; the Pentland Hills; the Lam'mermoor Hills; the Cheviot Hills; Moffat Hills; the Low'thers; Lead Hills; Tin'tock; Goatfell in the Isle of Arran.

RIVERS.—Find'horn, Spey, Dev'eron, Don, Dee; Tay (with its tributaries Tum'mel, Isla, and Earn); Forth (with its tributaries Teith, Al'lan, and Dev'on); Clyde; Tweed (with its tributaries Et'trick, Ga'la, Lea'der, Te'viot, and White'adder); Esk; An'nan; Nith; Dee in Kirkcudbright; Ayr.

LAKES.—Shin; Maree'; Ness and Lo'chy, united by the Caledo'nian Canal; Lag'gan; Awe; Er'icht; Ran'noch; Tay; Earn; Ka'trine, the scenery of which Sir Walter Scott has so vividly described in his "Lady of the Lake;" Lomond, studded with islands, and surrounded with scenery peculiarly grand and picturesque; Le'ven, with a castle on one of its islands in which Queen Mary was confined in 1567-68.

PRINCIPAL TOWNS.—In ORKNEY 32, Kirk'wall; Stromness', with an excellent harbour.

SHETLAND 32.—Lerwick.

CAITHNESS 41.—Wick 7, with its suburb, Pult'neytown, famous for its extensive herring fishery; Thur'so.

SUTHERLAND 25.—Dor'noch, near which is Dunrobin Castle, the seat of the Duke of Sutherland.

ROSS 70.—Ding'wall, near which is Strathpeffer, noted for its mineral waters; Tain; Storn'oway, in Lewis, with an excellent harbour.

CROMARTY 11.—Cromarty.

INVERNESS 88.—Inverness 12, the chief town in the Highlands: five miles east from it is Cullo'den Moor, where Prince Charles Stuart was totally defeated by the Duke of Cumberland, on the 16th April 1746; Fort-George; Fort-Augus'tus; Fort-William; Portree' in the Isle of Skye.

ARGYLL 81.—Invera'ray; Inveraray Castle, the seat of the Duke of Argyll; Camp'belton 6, a flourishing seaport; O'ban; Tobermo'ry, in the Isle of Mull.

NAIRN 10.—Nairn, a small seaport.

MORAY or ELGIN 43.—Elgin 8, noted for the ruins of its noble cathedral; For'res; Foch'abers, near which is Gordon Castle, the seat of the Duke of Richmond.

BANFF 59.—Banff, including Macduff 7, with a considerable trade; Portsoy', noted for its marble quarry; Cul'len; Keith, the birthplace of James Ferguson the self-taught astronomer.

ABERDEEN 222.—Aberdeen 74, consisting of New Aberdeen, with an extensive trade, and Old Aberdeen, in which is situated the University of Aberdeen; Peter-head' 8, the most easterly town in Scotland, with a considerable trade; Fra'serburgh, with an extensive herring-fishery; Hunt'ly.

KINCARDINE or THE MEARNs 34.—Stoneha'ven, near which are the ruins of Dunnot'tar Castle, once the chief seat of the Earls Marischal of Scotland; Ber'vie; Laurencekirk', the birthplace of Dr Beattie, the author of "The Minstrel," and noted for its manufacture of snuff-boxes.

FORFAR or **ANGUS** 204.—Forfar 9; Dundee' 90, with a very extensive trade; Montrose' 15, a flourishing town; Arbroath' 18, with the ruins of a magnificent abbey; Brechin 7, with an old cathedral, and a round tower; Coupar-Angus, partly in Perthshire.

PERTH 134.—Perth 25, surrounded by beautiful scenery; Scone (Scoon) near Perth, anciently noted for its abbey, where the kings of Scotland were crowned; Dunkeld', with the ruins of a cathedral in the midst of romantic scenery; Dunblane', with the ruins of a fine cathedral, and a library founded by Bishop Leighton: near it is Sheriffmoor', where a battle was fought between the King's troops and the Jacobite insurgents in 1715; Crieff, with manufactures of linen and cotton; Cal'lander; Kincardine; Cul'ross, with the remains of an ancient abbey.

FIFE 155.—Cu'par 5; Falk'land, with the remains of a royal palace; St Andrews 5, the seat of the oldest university in Scotland; Dy'sart 8; Kirkcal'dy 11; Kinghorn', Burntisland; Inverkeithing; Dunfermline 14, noted for its manufacture of table-linen, and for its ancient abbey, where King Robert Bruce and many of the Scottish kings were buried, and for its palace, where King Charles I. was born.

KINROSS 8.—Kinross.

CLACKMANNAN 21.—Clackmannan; Alloa 7, with a good trade, chiefly in coal; Dol'lar, with an endowed academy: near it are the ruins of Castle Campbell.

STIRLING 92.—Stirling 14, with a castle which was a favourite residence of the kings of Scotland: two miles south is Ban'nockburn, where the English, under King Edward II., were totally defeated by the Scots, commanded by King Robert Bruce, on the 24th of June 1314; Fal'kirk 9, where great cattle-markets called *trysts* are held: near it is Car'ron, with large iron-works; Grange'mouth, a thriving seaport.

LINLITHGOW or WEST LOTHIAN 39.—Linlithgow, with the ruins of a royal palace, in which Queen Mary was born in 1542; Borrowstounness' or Bo'ness'; Queensfer'ry, supposed to be so called from its being the place where St Margaret, Queen of Malcolm Ceanmore, crossed the frith in passing from Edinburgh to Dunfermline; Bath'gate, with an endowed academy.

EDINBURGH or MID LOTHIAN 274.—Edinburgh 168, the capital of Scotland, much admired for its elegant buildings and picturesque situation, and famous for its university and other seminaries of learning; Leith 34, the port of Edinburgh, with a very extensive trade; Portobel'lo, a favourite bathing-place; Mus'selburgh 7; Dal'keith 5, with a weekly market for grain: near it is Dalkeith Palace, the chief seat of the Duke of Buccleuch.

HADDINGTON or EAST LOTHIAN 38.—Haddington, the birthplace of John Knox, the famous Scottish reformer, with a weekly grain market; Dunbar', near which the Scots were defeated by Cromwell in 1650; North Ber'wick; Prestonpans', in the vicinity of which the Jacobite insurgents signally defeated the King's troops, in 1745; Tranent'.

BERWICK or THE MERSE 37.—Green'law; Dunse; Lau'der; Cold'steam, where, about 1650, General Monk raised a regiment still known by the name of the Coldstream Guards; Earl'ston, celebrated of old as the residence of Thomas the Rhymer, and now noted for the manufacture of gingham.

ROXBURGH or TEVIOTDALE 54.—Jed'burgh, with the ruins of a fine abbey, founded by King David I., in 1136; Kel'so, with the ruins of an abbey, founded by King David I., in 1128: near it are the vestiges of the ancient castle of Roxburgh, and Floors, the chief seat of the Duke of Roxburghe; Haw'ick 8, with

flourishing woollen manufactures; Mel'rose, celebrated for the beautiful ruins of its abbey.

SELKIRK 10.—Selkirk; Galashiels' 6, noted for its manufactures of woollen cloth: near it, on the opposite side of the Tweed, is Abbotsford', the interesting mansion built for himself by Sir Walter Scott, who died here, on the 17th September 1832.

PEEBLES or TWEEDDALE 11.—Peebles; Inverleithen, with mineral springs, supposed to be the St Ro'nán's Well of Sir Walter Scott.

LANARK or CLYDESDALE 632.—Lanark 5, near which are the much-admired falls of the Clyde; Ham'ilton 11, near which is the princely residence of the Duke of Hamilton; Glas'gow 395, the seat of a university, the commercial capital, and largest city of Scotland; Air'drie 13, in the centre of extensive coal and iron mines; Ruth'erglen 8.

DUMBARTON or THE LENNOX 52.—Dumbarton 8, remarkable for its castle, famous in Scottish history; Hel'ensburgh 5, a favourite resort for sea-bathing; Kirkintil'loch 6.

RENFREW 178.—Ren'frew; Pais'ley 47, famous for its manufactures of silk, muslin, and cotton; Port-Glas'gow 7; Green'ock 42, the birthplace of James Watt, the celebrated engineer, with an extensive commerce.

AYR 199.—Ayr 19: in its neighbourhood is the cottage in which Burns the poet was born; Ir'vine 7; Kilmar'nock 23, with thriving manufactures; Maybole'; Largs, much frequented for sea-bathing: here the Norwegians, under Haco, were defeated by King Alexander III., in 1263; Ardros'san; Troon; Gir'van 6; Salt'coats 5.

DUMFRIES 76.—Dumfries 14, the burial-place of Robert Burns; Sanq'uhar; An'nan; Moffat, frequented for its mineral waters; Lang'holm; Lochma'ben, in the

neighbourhood of a castle, now in ruins, which belonged to King Robert Bruce; Greta Green, once famous for clandestine marriages.

KIRKCUDBRIGHT 42.—Kirkcudbright; New Galloway; Castle-Douglas.

WIGTOWN 42.—Wigtown; Whitehorn, the site of the first Christian church built in Scotland; Stranraer (Stranraer) 6, with a good harbour and a considerable trade; Portpatrick, whence packets sail to Donaghadee, in Ireland, twenty-one miles distant; Newton-Stewart.

BUTE 16.—Rothesay 7, with an ancient royal castle, celebrated for the mildness of its climate, and a great resort for sea-bathing: from this town the eldest son of the sovereign of Britain takes the title of Duke; Brodick (in Arran), near which is Brodick Castle, a seat of the Duke of Hamilton; Lamash (in Arran).

Scotland is situated between 54° 38' and 58° 40' N. Lat., and between 1° 46' and 6° 5' W. Long., exclusive of the islands. Its length from the Mull of Galloway to Cape Wrath is 278 miles; its breadth, from Buchanness to the most westerly point in Ross-shire, 150 miles; its superficial extent, including that of the islands, 30,685 square miles. The aspect of the country is mountainous, in many places presenting scenery of wild and savage grandeur; there are, however, extensive districts of a less rugged description, the more beautiful from the contrast with the bleak mountains which surround them.

The climate is very variable, and, in consequence of the insular situation of the country, its high latitude, and its numerous mountain-chains, is, upon the whole, comparatively cold and wet. The soil is mostly of a sterile character, except in the vales and level districts, where it is excellent; and in no country of the world has agriculture been pursued with more enterprise and skill.

The usual kinds of grain are produced in abundance. The country is noted for its breed of domestic animals. Its extensive moors are well stocked with grouse, blackcock, ptarmigan, and other game. Most of the rivers and lakes yield salmon, trout, pike, and perch; while the seas abound in herring, turbot, had-

dock, cod, ling, lobsters, crabs, oysters, and other kinds of fish. Among the minerals may be enumerated coal, iron, lead, slate, limestone, barytes, and inexhaustible quarries of sandstone, granite, and other building materials.

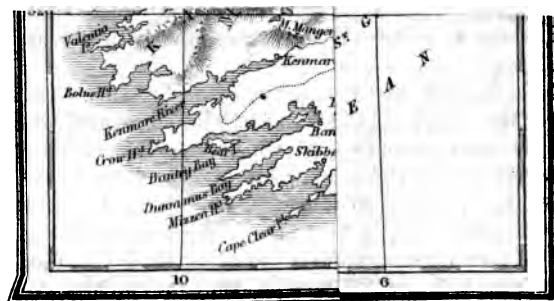
The established religion is the Presbyterian, but all other forms are freely tolerated. In consequence of the admirable institution of parochial schools, the advantages of a good education are within the reach of all classes of the people, most of whom can read and write. Scotland has four universities, and claims some of the proudest names in science and literature. The people are noted for their industry, enterprise, perseverance, integrity, and trust-worthiness. They are patient of fatigue, prudent, frugal, high-minded, and of indomitable courage and constancy.

Since the union with England in 1707, the government of the two countries has been the same.

In 1861 the population of Scotland was 3,062,294.

EXERCISES.—Name the boundaries of Scotland. Into how many counties is it divided? Point them out. Which are the two most southerly? Name the counties that border upon England. Name those that border on Peebles. Where is Kilbrannan Sound? the Minch? Glenluce Bay? How is Staffa situated, and for what is it celebrated? Where is St Abb's Head? Cape Wrath? Kinnaird's Head? Dunnet Head? For what was Iona or Icolmkill distinguished? Name the islands in the Frith of Forth. What two capes are on the south of Wigtown? Which is the highest mountain in Great Britain? By what are Lochs Ness and Lochy united? Where are the Pentland Hills? Where is Loch Leven? Who was imprisoned in a castle on one of its islands, and in what years? Where is Loch Lomond, and with what is it studded and surrounded? Name the towns in Caithness. For what is Wick famous? Where is Ben Nevis? In what direction do the Findhorn, Spey, and Deveron flow? Through what county do the Nith and Annan flow, and into what do they fall?

Name the towns in Inverness-shire. What occurred at Culloden Moor, and when? Where is Portree? Through what counties does the Tweed flow, and into what does it fall? Name the towns on this river. Name its tributaries. Where are the Cheviot Hills? What are the chief towns in Banffshire? For what is Portsoy noted? Which is the most easterly town in Scotland? What occurred near Dunbar, and when? For what is Edinburgh remarkable? For what is Dunfermline celebrated? Why was Queensferry so called? Where is Bannockburn? What took place there, and when? Where was the first Christian church built in Scotland? On what river are Perth and Dunkeld situated? Where and when was Queen Mary born? How many universities are there in Scotland? Where are they



DRAW

situated? Which is the oldest? Through what county does the Tay flow? Name its tributaries. What river forms the boundary between Perth and Stirling? Where is Corsill or Fairland Point? Through what counties do the two rivers Dee flow?

Name the towns in Berwick or the Merse. For what is Earlston noted? Where was John Knox the famous Scottish reformer born? What took place in the vicinity of Prestonpans, and when? For what was Scone noted? What are the towns in Roxburgh? On what river is Hawick situated? Near what town does the Teviot join the Tweed? What remarkable buildings are in the vicinity of this town? For what is Galashiels noted? What is near this town? For what is Dumbarton remarkable? By whom, and in what years were the abbeys of Jedburgh and Kelso founded? What is stated of Glasgow? What is its population? Where was Burns the poet born? Where was he buried? For what is Melrose celebrated? What eminent man was born at Greenock? What occurred at Largs, and in what year? For what manufactures is Paisley famous? What is stated of Rothesay? What is the population of Edinburgh? Dundee? Aberdeen? Greenock? Perth? Dumfries? Inverness? For what was Gretna Green once famous? On what river is Stirling situated? What is said of its castle?

Between what degrees of latitude and longitude is Scotland situated? What are its length, breadth, and superficial extent? What is the aspect of the country? What is the nature of the climate and soil? What are its chief vegetable productions? Is Scotland noted for its breed of domestic animals? What do most of the rivers and lakes yield? In what do the surrounding seas abound? Mention the chief mineral productions. What is the established religion? In what state is education? For what are the Scotch noted? What is the government of Scotland? What is the population of Scotland?

IRELAND

Is bounded on the N.W. and S. by the Atlantic Ocean; and on the E. by the North Channel, the Irish Sea, and St George's Channel.

It is divided into four provinces,—UL'STER, LEIN'STER, MUN'STER, and CON'NAUGHT, which are subdivided into thirty-two counties; of which ULSTER contains 9,—An'trim, Down, Armagh', Mon'aghan, Cav'an, Fer-mar'agh, Tyrone', Lon'donderry, Donegal';—LEINSTER 12,—Louth, Meath or East Meath, West Meath, Long'-ford, King's County, Kildare', Dublin, Wick'low, Car'-low, Queen's County, Kilken'ny, Wex'ford;—MUNSTER

6,—Tipperary, Waterford, Cork, Kerry, Limerick, Clare;—and CONNAUGHT 5,—Galway, Mayo, Sligo, Leitrim, Roscommon.

BAYS AND HARBOURS.—Carrickfergus Bay or Belfast Lough, Strangford Bay, Carlingford, Dundalk, Dublin; Wexford Harbour, Waterford, Cork; Dunmanus Bay, Bantry, Kenmare River, Dingle, Tralee, Mouth of the Shannon, Galway, Clew, Blacksod, Killa, Sligo, Donegal; Lough Swilly, Lough Foyle, Dundrum.

ISLANDS.—Rathlin, Cope land, Ireland's Eye, Tuscar Rock, Saltees, Clear, Bear, Valentia, South Isles of Arran, Clare, Achil, North Isles of Arran, To'ry.

CAPIES.—Malin Head, Innishowen Head, Bengore Head, Giant's Causeway, Fair Head, Howth Head, Wicklow Head, Greenore Point, Carnsore Point, Cape Clear, Mizzen Head, Crow Head, Bolus Head, Dunmore Head, Kerry Head, Loop Head, Slyne Head, Achil Head, Urris Head, Tiltan Head, Bloody Foreland Point.

MOUNTAINS.—Mountains of Mourne, Nephin, Croagh Patrick, The Twelve Pins, Sliebh Bloom (Sleeve Bloom), Wicklow Mountains, Mangerton, Macgillicuddy's Reeks, Galtee, Comeragh.

RIVERS.—Foyle, Bann, Lagan, Mourne, Boyne, Liffey, Slaney, Barrow, Nore, Suir, Blackwater, Lee, Ban'don, Shan'non (with its tributary Suck), Moy, Erne.

LAKES OR LOUGHS.—Ne'agh, the largest lake in the United Kingdom; Erne; Allen; Baffin; Rea; Derg, an island in which is a noted resort of Roman-catholic pilgrims; Conn; Mask; Corrib; Lakes of Killarney, celebrated for their picturesque beauty.

PRINCIPAL TOWNS.—In ANTRIM 378; Antrim, with considerable linen manufactures; Belfast 121, the second town in Ireland, noted for its commerce and manufactures.

and the seat of one of the Queen's Colleges; Carrickfergus, with an ancient castle; Lis'burn 8; Ballyme'na 7, with manufactures of linen; Larne, where Edward Bruce, brother of the King of Scotland, and himself afterwards crowned King of Ireland, landed in 1315.

DOWN 300.—Downpat'rick, one of the most ancient towns in Ireland, with a cathedral in which St Patrick is said to have been buried; New'ry 12, with flourishing manufactures; Newtonards' 10, with manufactures of diaper and muslin; Dromore'; Donaghadee', twenty-one miles from Portpatrick in Scotland.

ARMAGH 190.—Armagh 9, with extensive linen manufactures, anciently the metropolis of Ireland; Lur'gan 8; Portadown' 6.

MONAGHAN 126.—Monaghan, with a good trade; Carrickmacross'; Clo'nes, with interesting remains of antiquity.

CAVAN 154.—Cavan; Beltur'bet; Coote'hill, with a large linen manufacture.

FERMANAGH 106.—Enniskil'ten 6, on an island in Lough Erne.

TYRONE 238.—Omagh', with a linen market; Dungan'non, once the residence of the kings of Ulster; Strabane' 5; New'ton-Stew'art.

LONDONDERRY 184.—Londonderry or Derry 21, with an active commerce: it is famous for the siege which it sustained against James II. in 1688-89; Coleraine' 6, a mart for linen manufactures; Magherafelt'; New'ton-limavad'y.

DONEGAL 238.—Lifford; Donegal; Ballyshan'non; Raphoe'; Letterken'ny, with a good trade in linen.

LOUTH 76.—Drogh'eda 15, one of the principal corn-markets in Ireland: near it was fought the battle of the Boyne in 1690, where King William III. defeated

King James II.; Dundalk' 10, with a good export trade and considerable manufactures; Carlingford; Louth; Ardee'.

MEATH or EAST MEATH 110.—Trim; Nav'an; Kells.

WEST MEATH 91.—Mullingar' 5, noted for its wool-market and cattle-fairs; Athlone' 6, a fortified town; Castlepollard; Kilbeg'gan.

LONGFORD 72.—Longford 5; Lanesborough; Grannard'; Edgeworthstown', the birthplace of the celebrated writer, Maria Edgeworth.

KING'S COUNTY 90.—Tullamore' 5, with flourishing manufactures of cotton and linen; Philipstown; Birr or Parsonstown 5, a thriving inland town; Ban'agher, with a bridge of nineteen arches across the Shannon.

KILDARE 91.—Kildare, noted for the extensive common in its neighbourhood, called "The Curragh of Kildare," the finest race-ground in Europe; Athy'; Naas; Maynooth', at which is the Royal College of St Patrick for the education of the Roman-catholic clergy.

DUBLIN 410.—Dublin 305, the capital of Ireland, one of the finest cities in Europe, noted for its university and public buildings; Swords; Kingstown 12, whence mail steam-packets sail daily to England; Skerries; Balbriggan, with manufactures of fine stockings in imitation of silk.

WICKLOW 86.—Wicklow; Arklow 5; Baltinglass; with manufactures of flax and wool; Bray.

CARLOW 57.—Carlow, 9, with a fine Roman-catholic cathedral; Leighlin; Tul'low.

QUEEN'S COUNTY 91.—Ma'ryborough; Portarlington; Mountmellick; Mountrath'.

KILKENNY 110.—Kilkenny 14, in the neighbourhood of fine marble quarries; Callan; Thom'astown.

WEXFORD 144.—Wexford 12, with an indifferent

harbour; Enniscor'thy 6, near which is Vinegar Hill, where the Irish insurgents were routed by General Lake in 1798; New Ross 7; Ferns.

TIPPERARY 249.—Clonmel' 12, the birthplace of Laurence Sterne; Tipperary 6; Cash'el, with the interesting remains of an ancient cathedral; Car'rick-on-Suir 7, noted for its woollen manufactures; Thurles 5; Ca'hir; Ne'nagh 6, with an active trade; Roscrea'.

WATERFORD 134.—Waterford 23, with a fine harbour and extensive commerce; Dungar'van 7, with lucrative fisheries; Lismore', with a castle, once the property of Sir Walter Raleigh, in which the famous Robert Boyle was born; Tal'low.

CORK 545.—Cork 80, the third town in Ireland. has extensive trade and manufactures, and is the seat of one of the Queen's Colleges; Yough'al 7, where the first potatoes introduced into Europe were planted by Sir Walter Raleigh; Kinsale' 5, with an extensive fishery; Ban'don 6, with some manufactures, and a famous chalybeate spring in its vicinity; Fermoy' 9; Charle'ville; Mal'low 5; Queenstown 9, in Great Island, the port of Cork, with a safe and capacious harbour.

KERRY 202.—Tralee' 10; Ard'fert; Din'gle, the most westerly town in Ireland; Killar'ney 5, near the lakes of the same name, famous for their beautiful and picturesque scenery.

LIMERICK 217.—Limerick 44, the fourth town in Ireland, with extensive trade and manufactures; Rathkeale'; Newcastle.

CLARE 166.—En'nis 7, with the ruins of a noble abbey; Clare; Kilrush' 5; Killaloe'.

GALWAY 271.—Galway 17, with a thriving trade and manufactures, the seat of one of the Queen's Colleges; Tu'am 8; Loughrea'; Ballinasloe', noted for its large annual cattle-market; Gort.

MAYO 255.—Castlebar', with an active trade; Ballinrobe'; West'port; Balli'na 5.

SLIGO 125.—Sligo 11, a thriving seaport.

LEITRIM 105.—Car'rick-on-Shannon; Leitrim; Man'or-Ham'ilton.

ROSCOMMON 157.—Roscommon; Boyle; Athlone' 6, part of which is in West Meath; El'phin, the birthplace of Oliver Goldsmith: it is said to have been founded by St Patrick in the fifth century.

Ireland is situated between 51° 26' and 55° 23' N. Lat., and between 5° 24' and 10° 30' W. Long. Its length, between Brow Head in Cork, and Malin Head in Donegal, is 280 miles; its breadth, between the extremity of Mayo and Strangford Bay in Down, 180 miles; its superficial extent 31,754 square miles. The general aspect of the island is level; but in many parts are mountain-tracts of considerable elevation, abounding in magnificent and picturesque scenery.

The climate, though humid, is mild and salubrious, owing to the prevalence of westerly and south-westerly winds. The soil, which is very fertile, produces abundant crops, and is especially adapted for pasturage. A considerable portion of the surface consists of bogs, the greater part of which may yet be cultivated, as they are so far above the sea-level as to be easily drained. Much has been done of late years to reclaim these marshes to the purposes of agriculture.

The vegetable and animal productions are nearly the same as those of England. Coal of excellent quality, copper, and lead, are met with in abundance; and gold is found in the streams which issue from the Wicklow Mountains. The rivers, lakes, and shores of Ireland abound with salmon and other fish; but, from the low state of industry, the fisheries are still too much neglected, though efforts have been made, both by the government and by private companies, to carry them on successfully.

The established religion is Protestant Episcopacy; but about four-fifths of the people are Roman-catholics. In Ulster nearly half of the population are Presbyterians. National schools for the elementary instruction of the people, without respect to their religious opinions, have been established throughout the country at the expense of the government. There are two universities, —the University of Dublin, containing Trinity College, Dublin;

and the Queen's University, containing the Queen's College at Belfast, the Queen's College at Cork, and the Queen's College at Galway. Maynooth College, for the education of the Roman-catholic clergy, is supported by government.

Sunk in ignorance and poverty, the people are thoughtless, slothful, and reckless; but, at the same time, light-hearted, cheerful, and generous. They may be classed among the finest soldiers in the world.

The political government of Ireland was merged in that of Great Britain by the union in 1801. The executive is vested in a Lord-Lieutenant, appointed by the Crown, and removable at pleasure, who is assisted by a Privy-Council and a Chief Secretary.

The population in 1861 was 5,798,967.

EXERCISES.—How is Ireland bounded? Into how many provinces is it divided? How many counties does it contain? Which is the most southerly county? the most northerly? the most easterly? the most westerly? Where are the Lakes of Killarney, and for what are they celebrated? What counties border on Lough Neagh? Name the counties in Ulster; in Leinster; in Munster; in Connaught. Through what lakes does the Shannon flow, and into what does it fall? Where is Cape Clear? Malin Head? Carnsore Point? Urris Head? Fair Head? Howth Head? Loop Head? Between what counties is Lough Foyle? Where are the Mourne Mountains? Mangerton? Galtee? Where is the Giant's Causeway? What counties does the Suir separate? Through what counties, and in what direction, does the Liffey flow? What city is at the mouth of this river? Where is Carrickfergus Bay? Strangford Bay? Dundalk Bay? Where is Achil Island? Valentia? Rathlin? Tuscar Rock? Tory? Into what does the Barrow fall? Where is Dingle Bay? Clew Bay? Lough Swilly?

Name the towns in Antrim. For what is Belfast noted? What is its population? How is it situated? In what county is Drogheda? What battle was fought in its neighbourhood, and in what year? Who is said to have been buried at Downpatrick? Name the other towns in Down. What is stated of Armagh? In what county is Larne? Who landed here, and in what year? Where is Donaghadee? What is its distance from Portpatrick? Name the towns in Cavan. In what county is Enniskillen, and where is it situated? What is remarkable about Londonderry? Name the towns in Donegal? In what county is Mullingar, and for what is it noted? For what is Kildare noted? In what county is Edgeworthstown? Who was born there? What is stated of Dublin? Name the towns in Wicklow. In what county is Enniscorthy? What occurred at Vinegar Hill near this town, and in what year? Name the towns in Queen's County. In what county is Lismore? What is stated of it? Where, and by whom, were the first potatoes introduced into Europe planted?

Name the towns in Galway. In what county is Elphin? Who was born there? By whom, and when is it said to have been founded? What is said of Cork? Which is the fourth town in Ireland? Name the towns in Mayo. In what county is Clonmel? Who was born there? Which is the most westerly town in Ireland? In what county is Maynooth? What seminary of learning is there? What is the population of Dublin? of Cork? of Limerick? of Galway? of Kilkenny? of Waterford? Which is the most populous county in Ireland? Which county has the least population?

Between what degrees of latitude and longitude is Ireland situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? What are its mineral productions? With what do the rivers, lakes, and shores of Ireland abound? In what state are the fisheries, and from what cause? What is the established religion? What proportion of the people are Roman-catholics? What form of religion has many followers in Ulster? What provision has been made for elementary education? How many universities are there? How many colleges do they contain? What is the character of the people? In whom is the executive government vested? What is the population of Ireland?

FOREIGN POSSESSIONS OF GREAT BRITAIN.

In Europe.—Heligoland', in the German Ocean; Gibraltar, in the south of Spain; Malta and Go'zo, in the Mediterranean.

In Asia.—The greater part of Hindostan'; As'sam, Chittagong', Aracan', Pegu', and the Tenas'serim Provinces (Martaban', Ye, Ta'voy, and Tenasserim) in the Eastern Peninsula; the Eastern Straits Settlements (Pu'lo Penang', or Prince of Wales Island, in the Malac'ca Straits, Province Wellesley, Malacca, and Singapore'); Ceylon'; Hong Kong, Cowloon'; Labu'an; A'den.

In Australasia.—New South Wales in the east, Queensland in the north-east, South Australia in the south, Victoria in the south-east, Western Australia

in the west, of Australia; Tasma'nia; New Zea'land; Norfolk Island; the Auck'land Islands.

In Africa.—West Africa Settlements (Sier'ra Leo'nè, Gam'bia, Cape Coast Castle, Ac'cra, and La'gos); Cape Colony; Natal'; the islands of Ascension, St Hele'na, and Mauri'tius; the Seychelles' Islands.

In North America.—Can'ada; North-West Territory (formerly belonging to the Hudson Bay Company); New Bruns'wick; No'va Sco'tia; Newfoundland; Cape Breton; Prince Edward Island; Vancouver Island; British Colum'bia; Hondu'ras; the Bermudas.

In South America.—British Guiana (comprehending Demera'ra, Essequi'bo, and Berbice'); the Falkland Islands.

In the West Indies.—Jamai'ca; the Baha'mas; Barba'does; St Vin'cent; Grena'da; Toba'go; St Lu'cia; Trinidad'; Anti'gua; St Christopher's; Montserrat'; Ne'vis; Anguil'la; Domini'ca; Virgin Islands (viz. Torto'la, Virgin Gor'da, Anega'da).

EXERCISES.—What are the foreign possessions of Great Britain in Europe, and where are they situated? Name those in Asia; in Australasia; in Africa; in North America; in South America; in the West Indies.

PORTUGAL

Is bounded on the N. and E. by Spain; and on the S. and W. by the Atlantic.

PROVINCES.—Entre Dou'ro'e Min'ho, Tras-os-Mon'tes, Be'i'ra, Estremadu'ra, Alente'jo, Algarve'.

CAVES.—Monde'go, Ro'ca or Rock of Lisbon, Es'pichel, St Vin'cent (off which Sir John Jervia, afterwards Earl St Vincent, defeated the Spanish fleet, 14th February 1797), San'ta Mari'a or St Mary.

MOUNTAIN.—Sier'ra de Estrel'la.

RIVERS.—Min'ho, Dou'ro, Monde'go, Ta'gus, Guadiana, Sa'do or Sa'dao.

PRINCIPAL TOWNS.—In ENTRE DOURO E MINHO.—Opor'to 86, noted for its trade in a strong red wine which takes from it the name of *Port*; Bra'ga 20, the archbishop of which is primate of the kingdom; Via'na 8, with a considerable trade and extensive fisheries.

TRAS-OS-MONTES.—Bragan'za 5, a duchy held by the ancestors of the present royal family, has important silk manufactures; Miran'da; Vil'la Re'al; Cha'ves 6, has been frequented for its mineral waters since the time of the Romans.

BEIRA.—Coim'bra 18, famous for its university; Vise'u 9, noted for its great annual fair; Castel'lo-Bran'co 6; Almei'da 7, a fortified town, and a military post of great importance.

ESTREMADURA.—Lis'bon 224, the capital of Portugal, and the birthplace of Camoens the poet, has an extensive commerce: it was almost destroyed by an earthquake, November 1, 1775, when 60,000 of the inhabitants are said to have perished; Setubal' or St Ubes 13, with an extensive trade in wine and salt; San'tarem 8; Cin'tra, noted for a convention made there in 1808 between the British and the French, by which the latter were allowed to evacuate Portugal; Tor'es Ve'dras, the centre of the celebrated military lines formed by the British under Wellington in 1810; Abran'tes 5.

ALENTEJO.—Evo'ra 15, noted for its Roman antiquities; El'vas 11, the strongest town in the kingdom; Be'ja 5, with several ancient remains.

ALGARVE.—Fa'ro 8, and Tavi'ra 11, with thriving fisheries; Lagos 7.

FOREIGN POSSESSIONS.—*In Asia*.—Go'a, Damaun', and Diu in Hindostan; Maca'o, near Canton' in China; and settlements at Timor', in the Indian Ocean. *In Africa*.

—The Cape Verde Islands, the Azores, the Madei'ras; Con'go, Ango'la, Bengue'la; Sofa'la, Mozambique'.

Portugal is situated between 37° and $42^{\circ} 10'$ N. Lat., and between $6^{\circ} 14'$ and $9^{\circ} 30'$ W. Long.; its length from north to south is 350 miles; its breadth from east to west, 140 miles; its superficial extent, 36,510 square miles. The general aspect of the country bears a considerable resemblance to that of Spain.

The climate is delightful and salubrious; but the soil, in general light, is not well adapted for agriculture.

Besides the usual kinds of grain, the country produces wine in great abundance, particularly the kind called port; also oranges, lemons, citrons, almonds, etc. Mules, of an excellent breed, are very common; but the horses are inferior to those of Spain. There are mines of lead, iron, tin, and copper.

The Roman-catholic is the established religion, but others are now tolerated. Education is still too much neglected, and too many of the people are ignorant and superstitious. The manners and customs of the inhabitants of the northern provinces differ widely from those of the southern; sincerity and industry characterize the former, while the latter are more polite, but faithless and indolent; in general very little regard is paid to cleanliness.

The government is a limited monarchy. The population is 3,984,045.

EXERCISES.—What are the boundaries of Portugal? Name its provinces. Which are the two most northerly? the most southerly? Through which does the Tagus flow? Of which is the Douro the northern boundary? Through which does the Guadiana flow? Where is Cape St Vincent? What occurred off this cape, and when? Which is the most southerly cape? the most westerly? In what province, and on what river, is Oporto? To what wine does it give name? What is the capital of Portugal, and what is stated of it? On what river is it situated? In what province is Cintra, and for what is it noted? What is stated concerning Torres Vedras? Name the towns in Beira. For what is Coimbra famous? In what province is Evora, and for what is it noted? In what province is Braga, and what is said of it? Through what province does the Mondego flow? What town is situated at the mouth of the Sado? Name the towns in Algarve. What are the foreign possessions of Portugal in Asia? in Africa?

Between what degrees of latitude and longitude is Portugal situated? What are its length, breadth, and superficial extent? What is the nature of the climate and soil? What are the vegetable and mineral productions? What is the established religion? In what state is education? What are the manners and customs of the inhabitants? What is the government of Portugal? What is its population?

SPAIN

Is bounded on the N. by the Pyrenees and the Bay of Biscay; W. by the Atlantic and Portugal; S. by the Straits of Gibraltar and the Mediterranean; E. by the Mediterranean.

DIVISIONS.—Spain was formerly divided into 13 provinces, or into 17, if account be taken of the subdivisions of Andalu'sia into Andalusia and Gran'ada, and of the Basque Provinces into Guipuzco'a, Bis'cay, Ala'va, and Navarre'. Since 1833 the country has been divided into 47 provinces, or, including the islands, into 49, viz. the old province of NEW CASTILE', containing the new provinces of Madrid', Tole'do, Guadalaxa'ra, Cuen'ça; LA MAN'CHA, Ciu'dad Real; OLD CASTILE, Bur'gos, Logro'no, Santand'er, So'ria, Sego'via, Av'ila, Palen'cia, Valladolid'; LEON', Leon, Zamo'ra, Salaman'ca; ASTU'RIAS, Ovie'do; GALIC'IA, Corun'na, Lu'go, Orense', Pontevedra'; ESTREMADU'RA, Bad'ajos, Cacer'es; ANDALU'SIA, Seville', Cad'iz, Huel'va, Cordo'va, Jaen, Granada, Alme'ria, Mal'aga; MUR'CIA, Murcia, Albacete'; VAL-EN'CIA, Valencia, Alicante', Castel'lon de la Plana; AR'AGON, Saragos'sa, Hues'ca, Teru'el; CATALO'NIA, Barcelo'na, Tarrago'na, Ler'ida, Gero'na; BASQUE PROVINCES, Navarre, Biscay, Guipuzcoa, Alava; the ISLANDS, Balea'ric, Cana'ries.

ISLANDS.—Balearic Islands 279, including Major'ca 182 (chief town, Pal'ma 41, with a university), Minor'ca 44 (chief town, Port Mahon' 14, with an excellent harbour), Iv'iça 11 (with a town of the same name 6);—Formente'ra, and several smaller islands; Leon.

CAPIES.—Or'tegal, Finisterre, Trafal'gar (off which Nelson vanquished the combined fleets of France and Spain in 1805), Euro'pa Point, De Ga'ta, Pa'los, St Mar'tin, Torto'sa, St Sebas'tian, Creux.

MOUNTAINS.—Pyrenees; Santilla'nos or Mountains of Asturias; Castil'ian Mountains; Mountains of Toledo; Sierra More'na; Sierra Neva'da; Montserrat'.

RIVERS.—Min'ho, Dou'ro, Ta'gus, Guadia'na, Guadalquiv'er, Segu'ra, Xu'car, Guadalav'iar, E'bro, Bidasso'a.

PRINCIPAL TOWNS.—*In New Castile.* MADRID.—Madrid 476, the capital of Spain, the most elevated metropolis in Europe, being 2220 feet above the sea.

TOLEDO.—Toledo 13, the see of an archbishop who is primate of Spain; Talave'ra 9, where the French were defeated by the British and Spanish armies in 1809.

In La Mancha. CIUDAD REAL.—Alma'den 9, noted for its mines of mercury,—the richest in Europe.

In Old Castile. BURGOS.—Burgos 16, with a fine cathedral, and the greatest wool-market in Spain. SEGOVIA.—Segovia 13, long noted for its manufacture of cloth: here is a magnificent Roman aqueduct said to have been built by Trajan. VALLADOLID.—Valladolid 40, the seat of a famous university, and the birthplace of Philip II.: here Columbus died in 1506.

In Leon. LEON.—Leon 6, with a fine cathedral. SALAMANCA.—Salamanca 15, with a celebrated university: here Wellington defeated the French in 1812.

In Asturias. OVIEDO.—Oviedo 13, with a university.

In Galicia. CORUNNA.—Santia'go de Compostel'la 29, with a large cathedral and flourishing manufactures; Ferrol' 17, a great naval arsenal; Corunna 19, where Sir John Moore fell, after defeating the French, on the 16th January 1809. LUGO.—Lugo 7, with hot springs.

In Estremadura. BADAJOS.—Badajos 12, a fortified city, stormed by Wellington in 1812; Olivença 10, with a thriving trade. CACEFES.—Caceres 12; Trux'illo 5, the birthplace of Pizzaro, the conqueror of Peru.

In Andalusia. SEVILLE.—Seville 152, with a magnificent cathedral; Eci'ja 24; Ossu'na 18, noted for its manufacture of hemp. CADIZ.—Cadiz 72, a principal seaport.

of Spain, and one of the strongest fortresses of Europe; Xeres-de-la-Frontera 39, celebrated for its strong white wine called *Sherry*; Gibraltar 15, a strong fortress, which has belonged to the British since 1704. CORDOVA.—Cordova 42, the birthplace of Lucan the poet, and of the two Senecas. GRANADA.—Granada 101, the ancient capital of the Moorish kings, celebrated for its magnificent palace called the Alhambra. ALMERIA.—Almeria 18, with a flourishing trade. MALAGA.—Malaga 113, famous for its wine and raisins.

In Murcia. MURCIA.—Murcia 109, with a fine cathedral; Carthage'na 34, said to have been founded by Asdrubal the Carthaginian: it has a noble harbour; Lor'ca 48, with flourishing manufactures. ALBACETE.—Albacete 11; Alman'za 9, with a great annual fair.

In Valencia. VALENCIA.—Valencia 146, with the most frequented university in the kingdom; Murvie'dro-7, on the site of the ancient *Saguntum*. ALICANTE.—Alicante 21, with a great commerce in wine, fruits, etc. CASTELLON-DE-LA-PLANA.—Castellon-de-la-Plana 17.

In Aragon. SARAGOSSA.—Saragossa 82, famous for its gallant defence against the French in 1808-9. HUESCA.—Huesca 9, a city of great antiquity. TERUEL.—Teruel 7.

In Catalonia. BARCELONA.—Barcelona 252, said to have been founded by Hamilcar, the Carthaginian general, about 230 years B.C.: it has numerous manufactures and extensive commerce; Vich or Vique 14, noted for its manufactures, and its copper and coal mines. TARRAGONA.—Tarragona 18, in the neighbourhood of which is a majestic tomb, said to be that of the Scipios; Torto'sa 18, with several remains of antiquity; Re'us 25, with important manufactures. LERIDA.—Lerida 17, the ancient *Iler'da*. GERONA.—Gerona 8; Olot 12, with a great transit trade; Figu'eras 8, one of the most remarkable fortresses in Europe.

In the Basque Provinces. NAVARRE.—Pampelu'na

11, one of the principal fortresses of Spain; Tu'dela 9, with considerable commerce; Estel'la 6. BISCAY.—Bilbo'a or Bilba'o 15, with considerable commerce. GUIPUZCOA.—St Sebas'tian 13, taken by assault from the French by Lord Lynedoch in 1813; Fontara'bia. ALAVA.—Vitto'ria 17, where Wellington gained a complete victory over the French in 1813.

FOREIGN POSSESSIONS.—Cu'ba, Por'to Ri'co, and part of St Domin'go, *in the West Indies*; the Canary Islands; Ceu'ta, *opposite Gibraltar*; Fernando Po and Annobon Islands, *on the west coast of Africa*; the Phil'ippine, the Ladrone', and the Car'oline Islands, *south-east from Asia*.

Spain is situated between $36^{\circ} 0'$ and $43^{\circ} 47'$ N. Lat., and between $3^{\circ} 20'$ E. and $9^{\circ} 20'$ W. Long. Its length from E. to W. is 650 miles; its breadth from N. to S., 520 miles; its superficial extent, about 176,480 square miles. The general aspect of the country is mountainous, the interior being a vast tableland from 1800 to 2600 feet above the level of the sea.

The climate is various: in the valleys, during the summer months, the heat is very great; in the elevated districts it is more moderate. The summits of many of the mountains are above the limits of perpetual snow. The soil is generally fertile, but agriculture is much neglected.

Besides the usual kinds of grain, Spain produces sugar, rice, maize, cotton, silk, and almost every kind of fruit. It has long been celebrated for its wines. The breed of horses and mules is particularly valuable; and immense flocks of Merino sheep are reared for their wool. There are mines of silver, lead, quick-silver, and cobalt; and iron, rock-salt, antimony, copper, and tin are found in abundance.

The Roman-catholic is the established religion, but other creeds are tolerated. Education has been much neglected. The manners of the people vary in different provinces; the higher classes are generally proud and indolent, but in many districts the lower orders are enterprising and industrious.

The government is a limited monarchy. The population is 16,302,625.

EXERCISES.—How is Spain bounded? Into how many provinces was it formerly divided? Into how many provinces is it now

divided? What provinces border on France? Name those that border on the Bay of Biscay and Portugal. Name the provinces bordering on the Mediterranean. Which is the most northerly cape? the most southerly? What occurred off Cape Trafalgar, and when? Name the mountains. Where does the Douro rise, and through what provinces does it flow? Describe the course of the Ebro; of the Guadalquivir; of the Guadiana; of the Tagus. In what province is Corunna? Who fell there, and when? In what province is Barcelona, and what is stated of it? In what province, and on what river, is Saragossa, and for what is it famous? Name the towns in Murcia. Who is said to have founded Carthage? In what province is Cordova, and who were born there? What is the population of Granada, and for what is it celebrated?

What is the capital of Spain, and what is remarkable about it? What occurred at Talavera? What occurred at Vittoria, and when? In what province is Cadiz, and for what is it remarkable? By whom was Badajos stormed, and when? What is the population of Malaga, and for what is it famous? Who was born at Valladolid? What is in the neighbourhood of Tarragona? What are the foreign possessions of Spain?

Between what degrees of latitude and longitude is Spain situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Mention the vegetable productions,—the domestic animals,—the mineral productions. What is the established religion? In what state is education? What are the manners of the people? What is the government of Spain? What is its population?

FRANCE

Is bounded on the N. by Belgium and the English Channel; W. by the Atlantic Ocean; S. by the Pyrenees and the Mediterranean; E. by Italy, Switzerland, and Germany.

DIVISIONS.—France was formerly divided into thirty-five Provinces. At the Revolution of 1789, it was subdivided into eighty-six Departments, including Corsica, viz. FRENCH FLANDERS, which forms the department of the North;—ARTOIS, which forms part of Pas-de-Calais;—PICARDY, comprehending Somme, N. part of Pas-de-Calais, N. part of Aisne;—ISLE OF FRANCE, Oise, Seine, Seine and Oise, Seine and Marne, S. part of Aisne;—

NOR'MANDY, Cal'vados, Eure, Manche, Orne, Lower Seine;—**MAINE**, Sarthe, Mayenne';—**BRETAGNE'** or **BRIT'TANY**, Cotes du Nord, Finistère, Ile-et-Vilaine', Lower Loire', Morbihan.

ANJOU', Maine et Loire;—**TOURAINÉ'**, In'dre-et-Loire;—**POITOU'**, Ven'dee, Deux Sevres, Vienne';—**AUNIS** and **SAINTONGE'**, Lower Charente';—**ANGOUMOIS'**, Charente;—**GUIENNE'** and **GAS'COGNE** or **GAS'CONY**, Dordogne', Gironde', Lot, Avey'ron, Tarn-et-Garonne', Lot-et-Garonne, Landes, Gers, Upper Pyrenees;—**BE'ARN**, Lower Pyrenees;—**ROUSSILL'ON**, Eastern Pyrenees;—**LANGUEDOC'**, Ardèche, Upper Loire, Lozère, Gard, He'rault, Tarn, Upper Garonne, Aude;—**COM'TE DE FOIX**, Ariege';—**PROVENCE'**, Lower Alps, Var, Mouths of the Rhone;—**COM'TAT D'AVIG'NON**, Vaucluse'.

DAUPHINÉ, High Alps, Drome, Isère; **LYON'NAIS**, Loire, Rhone;—**BOURGOGNE'** or **BUR'GUNDY**, Ain, Côte d'Or, Saone et Loir, Yonne;—**FRANCHE COM'TE**, Upper Saone, Doubs, Ju'ra;—**LORRAINE'**, Meurthe, Moselle', Meuse, Vosges;—**ALSACE'**, Upper Rhine, Lower Rhine;—**CHAMPAGNE'**, Ardennes', Marne, Aube, Upper Marne, —**ORLE'ANAIS**, Eure et Loir, Loir'et, Loir et Cher;—**NIVER'NAIS**, Nièvre;—**BER'RI**, Cher, In'dre;—**BOURBON'NAIS**, Allier;—**LA MARCHE**, Creuse;—**LIMOU'SIN**, Upper Vienne', Corrèze;—**AUVERGNE'**, Puy de Dôme, Cantal';—**Corsica**.

In 1860, France acquired from Sardinia the duchy of Sav'oy and the county of Nice, when three new Departments were erected, viz. Savoy, Upper Savoy, and the Maritime Alps.

BAYS.—Bay of Biscay; Gulf of Lions.

ISLANDS.—Ushant'; Belleisle' (in which is Pal'ais); Noirmoutier (noted for its salt-works and oysters); Yeu; Re; O'léron (in which is St Pierre'); Hieres'; **Corsica**.

CAPES.—La Heve; Bar'fleur; La Hogue (off which, in 1692, the English fleet completely defeated that of France); St Matthew; Du Raz.

MOUNTAINS.—Pyrenees, part of the Alps (including Mount Blanc, the highest mountain in Europe), Cevennes', Cantal, Puy de Dôme, Jura, Vosges, Côte d'Or (celebrated for its wine).

RIVERS.—Somme, Seine, Orne, Vilaine', Loire, Sèvre, Charente, Gironde (formed by the junction of the Dordogne' and Garonne); Adour', Rhone, Saone, Rhine, Moselle', Meuse, Marne, Escaut' or Scheldt.

PRINCIPAL TOWNS.—In the Department of the NORTH:—Lille 132, one of the most important fortresses in the kingdom; Dou'ay 24, with a great arsenal and a foundry for cannon; Dun'kirk 32, with an extensive trade; Cam'bray 23, whence the fine manufacture called cambric derives its name; Valenciennes' 25, noted for its manufactures of lace, gauze, etc.

PAS-DE-CALAIS.—Ar'ras 26, famous for its tapestry; St Omer' 22; Cal'ais 13, one of the principal stations of the packets between England and France: it was taken after a long siege by King Edward III. in 1347, and continued in possession of the English till 1558; Boulogne' 36, a strong seaport.

SOMME.—A'miens 59, the birthplace of Peter the Hermit: here a peace was concluded between Britain and France in 1802; Abbe'ville 20, with thriving manufactures; Cres'sy, famous for the victory gained by King Edward III. of England over the French in 1346.

AISNE.—La'on 10; St Quen'tin 31, with flourishing manufactures; Soissons' 10, the capital of the successors of Clovis I., King of France; La Fère, with the oldest artillery school in France.

OISE.—Beauvais' 15, famous for its cathedral and tapestry manufactures; Compiègne' 12, noted for its

magnificent royal palace; Noyon' 6, the birthplace of the great reformer John Calvin.

SEINE.—Paris 1,825,274, the capital of France, and next to London the largest city in Europe, is celebrated for its magnificent palaces, public buildings, gardens, and scientific and literary institutions; St Denis 22, remarkable for its ancient abbey, the burialplace of the French kings.

SEINE ET OISE.—Versailles' 50, famed for its magnificent royal palace, fountains, and gardens; St Germain 12, where King Louis XIV. was born, and King James II. of England died; St Cloud 7, the favourite residence of the Emperor Napoleon I.: here Henry III. was assassinated in 1589.

SEINE ET MARNE.—Melun' 11; Fontainebleau' 12, with a royal palace, where the Emperor Napoleon I. signed his abdication in 1814; Meaux 11, with a great corn-trade.

CALVADOS.—Caen 44, where William the Conqueror was buried; Falaise' 9, his birthplace; Bayeux 9, celebrated for its porcelain manufacture and its fine cathedral.

EURE.—Evreux' 12, with some Roman antiquities; Louviers' 11, with cloth manufactures.

MANCHE.—St Lô 10; Cherbourg 42, an important seaport, arsenal, and fortified harbour; Coutances' 8.

ORNE.—Alençon 16, with considerable manufactures; Argentan 6.

LOWER SEINE.—Rouen' 103, the birthplace of Fontenelle and the two Corneilles, with a noble cathedral said to have been founded by William the Conqueror; Havre de Grace 74, commonly called Havre, is the port of Paris, and one of the chief commercial towns in the kingdom; Dieppe' 20, noted for its sea-water baths.

SARTHE.—Le Mans 37, a manufacturing town; La Flèche 7, famous for its military college.

MAYENNE.—Laval 28, with a considerable trade; Mayenne 10, the centre of extensive linen-manufactures.

COTES DU NORD.—St Brieuc 15; Guingamp 7, famed for its manufactures of cotton, and for a kind of cloth to which it has given its own name (Ginghams).

FINISTERE.—Quimper 11; Brest 69, one of the finest harbours in Europe, and one of the chief stations of the French navy; Morlaix 14, with a good trade.

ILLE ET VILAINE.—Rennes 45; St Malo 9, one of the principal seaports in the country, near which is Cancale 6, celebrated for its oysters.

LOWER LOIRE.—Nantes 114, one of the most commercial cities in the empire.

MORBIHAN.—Vannes 15; Lorient 35, a naval port.

MAINE ET LOIRE.—Angers 52, in the neighbourhood of extensive slate-quarries; Saumur 14, with a fine bridge over the Loire.

INDRE ET LOIRE.—Tours 41, near which, in 732, the Saracens were defeated by Charles Martel; Amboise 5, where the name of Huguenots was first given to the Reformers in 1560; La Haye, the birthplace of the famous Des Cartes in 1596.

VENDEE.—Napoleon Vendee 8; Fontenay-le-Comte 8.

DEUX SEVRES.—Niort 21, a manufacturing and commercial town.

VIENNE.—Poitiers 31, famous for the victory gained near it in 1356, by Edward the Black Prince, over John, King of France, who was made prisoner, and carried captive to London; Châtellerault 14.

LOWER CHARENTE.—La Rochelle 19, a trading town, noted for the defence which the Huguenots maintained against Louis XIII. in 1627-28; Rochefort 31, an important naval station; Saintes 11.

CHARENTE.—Angoulême 25, celebrated for its paper-

works and other manufactures; Cognac' 8, famous for its brandy.

DORDOGNE.—Perigueux, 19, with several remains of antiquity; Ber'gerac, 12, noted for its wines; Sarlat 7, near which the celebrated Fénélon was born.

GIRONDE.—Bordeaux' 163, with a very extensive trade, especially in wine, brandy, and fruit.

LOT.—Cahors' 14, with a great trade in wines.

AVEYRON.—Ro'dez 12, with a fine cathedral; St Affrique' 7, and Roque'fort, noted for their cheese.

TARN ET GARONNE.—Montau'ban 27, with a Protestant seminary; Mois'sac, 10, with considerable commerce.

LOT ET GARONNE.—A'gen 17, where the learned Joseph Scaliger and Lacepède were born.

LANDES.—Mont-de-Marsan' 6; Aire 5, once the residence of Alaric, King of the Visigoths.

GERE.—Auch 12, the centre of large manufactures of cotton; Lectoure 6, the birthplace of Marshal Lannes.

UPPER PYRENEES.—Tarbes 15; Bagnères' 9, much frequented for its mineral waters.

LOWER PYRENEES.—Pau 22, the birthplace of King Henry IV. of France, and of Charles John Bernadotte, King of Sweden; Bayonne' 26, from which the well-known weapon the bayonet, which was here invented, takes its name.

EASTERN PYRENEES.—Perpign'an 23; Ceret' with a high bridge over the Tech of a single arch of 140 feet span.

ARDECHE.—Privas' 7; Anno'nay 16, the birthplace of Mongolfier, the inventor of the balloon, and famous for the manufacture of fine paper.

UPPER LOIRE.—Le Puy 17, noted for its manufacture of laces and small bells; Yssengeaux' 8.

LOZERE.—Mende 6, with considerable manufactures, particularly of serges.

GARD.—Nimes or Nismes 57, the birthplace of An-

toninus the Roman emperor, has extensive silk manufactures, and contains numerous monuments of Roman antiquity; Al'ais 20, with rich iron and coal mines in its neighbourhood, is the centre of a great trade in raw and wrought silk, and of various manufactures; Beaucaire' 10, celebrated for its annual fair.

HERAULT.—Montpel'lier 52, has a flourishing trade and manufactures, and is much resorted to by invalids on account of its pure air and mild climate; Beziers' 24, with a good trade in wine and brandy.

TARN.—Al'by 15, whence the persecuted Reformers called Albigenes took their name, the birthplace of the unfortunate navigator La Peyrouse, and the centre of great cloth-manufactures; Cas'tres 22, with numerous manufactures of cloth.

UPPER GARONNE.—Toulouse' 113, the principal cannon-foundry of the kingdom, with extensive manufactures of hardware: here the Duke of Wellington defeated the French, commanded by Marshal Soult, 10th April 1814; Saint-Gaudens 5; Bagnères' de Lu'chon, celebrated for its baths.

AUDE.—Carcassonne' 21, noted for its manufactures of cloth; Narbonne' 16, famed for its honey.

ARIEGE.—Foix 6, surrounded by iron-mines and marble-quarries.

LOWER ALPS.—Digne 7, the birthplace of the celebrated physician Gassendi, noted for its mineral waters; Sis'teron.

VAR.—Draguign'an 10; Toulon' 85, with one of the largest and safest harbours in Europe, the principal station in the Mediterranean for the French navy.

MOUTHS OF THE RHONE.—Marseilles' 261, with an extensive commerce, said to have been founded by the Phoceans about 539 years before Christ; Aix 28, famous for its warm baths.

VAUCLUSE.—Avign'on 36, with considerable manufactures and a good trade,—long the residence of the Popes; Orange' 10, formerly the capital of a small principality, giving the title of Prince to the eldest son of the King of Holland: it has some remarkable Roman antiquities.

UPPER ALPS.—Gap 8; Briançon, the highest town in France,—a remarkably strong fortress.

DROME.—Valence' 19, near which are produced the delicious wines called Hermitage; Montelimart' 12, the inhabitants of which are said to have been the first in France who embraced the Reformation.

ISERE.—Grenoble 27, with an extensive trade in gloves; Vienne' 20, with several Roman antiquities.

LOIRE.—Montbrison' 7; St Etienne' 92, surrounded by coal-mines, and celebrated for its numerous manufactures.

RHONE.—Ly'ons or Lyon' 319, famous for its silk-manufactures; Ville'franche 12.

AIN.—Bourg 14, with a magnificent church; Bel'ley 5, noted for the asphalt found in its neighbourhood; Fer'ney, long the residence of Voltaire.

CÔTE D'OR.—Dijon' 37, with a good trade in wine and flour; Beaune 11.

SAONE ET LOIRE.—Mâcon' 18, famous for its wine; Au'tun 12, with numerous Roman antiquities: the celebrated Prince Talleyrand was bishop of this city at the beginning of the French Revolution; Cha'lons-sur-Saone 20.

YONNE.—Auxerre' 15, in the midst of extensive vineyards; Sens 11.

UPPER SAONE.—Vesoul' 8; Gray 6, with a trade in iron, grain, and flour.

DOUBS.—Besançon 47, distinguished for its manufacture of clocks and watches.

JURA.—Lons-le-Saulnier 10, near which are salt-springs; Dôle 11, in the neighbourhood of a forest which covers 50,000 acres.

MEURTHE.—Nan'cy 49, enlarged and embellished by Stanislaus, King of Poland; Lu'nèville 16, where a treaty of peace was signed between France and Austria in 1801.

MOSELLE.—Metz 59, with considerable manufactures, is very strongly fortified; Thionville' 8.

MEUSE.—Bar-le-Duc 15, the neighbourhood of which is famous for its wines; Verdun' 12, with manufactures of paper, glass, and iron.

VOSGES.—Epinal' 12; St Die' 10; Mire'court 6, noted for its musical instruments; Neufchateau', near which is Dom'remy, the birthplace of the famous Joan of Arc.

UPPER RHINE.—Colmar' 23, with a flourishing trade; Mulhau'sen 46, celebrated for its manufactures of cottons and silks.

LOWER RHINE.—Stras'burg 82, carries on a very extensive commerce, and is famed for its magnificent cathedral, with a tower and steeple 466 feet high, having a clock which represents the constellations and the motions of the planetary system.

ARDENNES.—Mezières' 7; Sedan' 16, the birthplace of Marshal Turenne, is noted for its manufacture of fine cloth.

MARNE—Cha'lons 17, with a celebrated school of arts and trades; Rheims 56, the chief seat of the woollen manufacture, with a noble cathedral in which the kings of France were formerly crowned.

AUBE.—Troyes 35, with extensive trade and manufactures,—the birthplace of Pope Urban IV., the son of a shoemaker; Brienne', in the military school of which the Emperor Napoleon I. was a student.

UPPER MARNE.—Chau'mont 7, Lan'gres 10, noted for its cutlery and millstones.

EURE ET LOIRE.—Chartres 20 with the largest cathedral in France, is the centre of a great trade in corn and wool; Dreux 7.

LOIRET.—Orleans 51, noted for its manufactures of cotton, and famous for its siege by the English, which was raised in 1428 by Joan of Arc, commonly called the Maid of Orleans.

LOIR ET CHER.—Blois 20, noted for its trade in brandy; Vendôme 9.

NIÈVRE.—Nevers 19, celebrated for its china-ware, its royal foundry, its enamels, and jewelry.

CHER.—Bourges 28, with a cathedral, one of the finest in Europe.

INDRE.—Chateauroux 16, with large manufactures of cloth; Issoudun 14.

ALLIER.—Moulins 18, with a trade in cutlery.

CREUSE.—Gueret; Aubusson 6, with large carpet-manufactories.

UPPER VIENNE.—Limoges 51, the birthplace of Marshal Jourdan, noted for its manufactures of woollen and porcelain.

CORREZE.—Tulle 12, noted for its manufactures of lace and firearms.

PUY DE DÔME.—Clermont 37, the birthplace of Pascal, and the centre of an extensive inland trade; Thiers 16.

CANTAL.—Aurillac 11, the birthplace of Marshal Noailles; in the neighbourhood are mineral springs.

CORSICA.—Ajaccio 14, where the Emperor Napoleon I. was born on 15th August 1769; Bastia 19, the chief place of trade in the island.

SAVOY.—Chambery 14, a bishop's see, the capital of the ancient duchy of Savoy.

UPPER SAVOY.—L'Hôpital, formerly called Albertville in honour of the unfortunate Charles-Albert, King of Sardinia.

MARITIME ALPS.—Nice 48, famous for its fine climate and beautiful situation.

FOREIGN POSSESSIONS. *In the West Indies.*—Guadaloupe', Martinique', Mariegalan'tè, Saintes, Dessea'da, part of St Mar'tin. *In North America.*—Mi'quelon and St Pierre', in the Gulf of St Lawrence. *In South America.*—Cayenne', or French Guia'na. *In Africa.*—Algiers' or Alge'ria, Bo'na, Senegal, La Calle, St Louis, Goree', etc. *In the Indian Ocean.*—Reun'ion or the Isle of Bourbon', and the Island of St Mary, east of Madagas'car. *In Hindostan.*—Chandernagore', Carical', Pondicher'ry, Mahé, etc. *In the Eastern Peninsula.*—Sai'gong. *In the Pacific Ocean.*—The Marque'sas Isles, Tahiti, and New Caledo'nia.

France is situated between 42° 20' and 51° 5' N. Lat., and between 8° 16' E. and 4° 46' W. Long. Its greatest length is 665 miles; its greatest breadth, 576 miles; its superficial extent, 210,850 square miles. The general aspect of the country is agreeably diversified by an admixture of high and low lands. On the frontiers of Spain and Italy, it is decidedly mountainous, but towards the seacoast it is level, and in many places sandy.

The climate, though in general fine, varies considerably in different districts of the country. In the north, it is similar to the climate of the south of England, with more heat and humidity in summer, and severer cold in winter. In the central provinces, the temperature is pleasant and healthy. The winter is shorter and milder than in the north; and, in the summer, although there are frequently violent storms of hail, which prove very destructive to the vines and other crops, there is little rain, and the heat is less intense than in the south, where in summer it is so excessive during the middle of the day, that it is scarcely possible to work in the fields, and the grounds, to ensure a good crop, require frequent irrigation. Like the climate, the soil varies considerably in different districts; but, upon the whole, it is fertile, and yields abundant crops.

In the northern departments grain of all kinds is raised of excellent quality. In the central, besides the usual kinds of

grain, maize and vines are extensively cultivated; while, in the southern, maize is produced in great plenty, and the vine, which supplies the principal article of export, yields likewise the common beverage of the inhabitants. The chief fruits are olives, mulberries, and, in sheltered situations, oranges and lemons.

Among the domestic animals are sheep, in immense numbers; the mutton is excellent, but the fleece is inferior, except in the breed of Merinos, brought from Spain in 1787, which has much improved the wool of France: the oxen and horses are inferior to those of Britain. The poultry of France are more celebrated than any other of its domestic animals. The manner of feeding them swells the liver to an unnatural size, and gives them a delicacy which is much appreciated. The silk-worm is brought to great perfection in the central and southern provinces.

The fish most common in the rivers and seas of France are the salmon, cod, mackerel, herring, pilchard, turbot, ray, sole, whiting, and mullet; the tunny is found in the Mediterranean in the early part of summer. Among the wild animals may be mentioned the brown and the black bear in the Pyrenees, the lynx in the Vosges, and the wolf, so destructive to the flocks, in all the larger forests. The mineral productions, besides coal of an inferior quality (which is very little wrought), and iron (which is not found in coal-districts, and therefore smelted at a vast expense), are lead, antimony, and copper: jet is met with in large quantities; and some valuable and beautiful marbles are found in the Pyrenees.

The Roman-catholic is the prevalent religion of France, but there is freedom of worship to other religious sects, and salaries both to Roman-catholic and to Protestant clergy, and also to Jews, are paid by the state. Since 1833, every commune by itself, or in union with others, is compelled to have one school for elementary instruction,—thus supplying means for educating every class of the people.

The manners of the French are extremely engaging. They are impetuous, brave, lively, good-humoured, polite, and very attentive to strangers; but they are lax in their morals, especially in the larger towns, and the better orders either feel or affect too much indifference in religious matters.

The government, since 1852, has been vested in the Emperor Napoleon III., and exercised by him through a council of ministers. The constitution is a despotism with a few vestiges of popular freedom.

The population is 38,067,094.

EXERCISES.—What are the boundaries of France? Into how many departments is it divided? Which is the most westerly? the most northerly? the most southerly? the most easterly? What accession of territory did France obtain in 1860? Into what departments was this territory subdivided? What departments border on Spain? on the Mediterranean? on the Bay of Biscay between the Adour and the Loire? In what direction does the Seine flow, and into what does it fall? Which is the highest mountain in Europe? Where are the Jura Mountains? Cevennes? Vosges? For what is Côte d'Or celebrated? In what direction, and into what, does the Garonne flow? Into what does the Rhone fall? Where is Cape la Hogue? What occurred off this cape, and when? In what direction does the Loire flow? Where is Ushant? Hieres? Noirmoutier? Oleron? For what is Noirmoutier noted? Where is the Gulf of Lions? the Bay of Biscay? In what department is Cambrai, and what is stated of it? Where was John Calvin the great Reformer born? In what department is Amiens, and what events took place there? For what is Creasy famous? What is one of the principal stations of the packets between England and France? By whom, and in what year, was Calais taken?

What is the capital of France, its population, and for what is it celebrated? In what department is Rouen, and what is said of it? Where was William the Conqueror born? Where was he buried? Where was the favourite residence of Napoleon I.? Who was assassinated there, and in what year? Where, and in what year, did Napoleon I. sign his abdication? For what is Versailles famed? For what is St Denis remarkable? What is the port of Paris? At the mouth of what river is it situated? For what is Guingamp famed? In what department is La Rochelle, and for what is it noted? What is stated of Brest? For what is Poitiers famous? What occurred near Tours, and in what year? For what is La Haye noted? What is said of Amboise? In what department is Cognac, and for what is it famous? What weapon was invented at Bayonne? Who was born near Sarlat? For what is Bagueres much frequented? On what river is Bordeaux situated, and in what has it a very extensive trade? What is its population? Of whom is Pau the birthplace? In what department is Toulouse, and what is stated of it? Who were born at Agen?

On what account is Montpellier much resorted to? What Roman emperor was born at Nimes? What is stated of Alby? By whom, and when, is Marseilles said to have been founded? What is the principal station in the Mediterranean for the French navy? For what is Nice remarkable? What is said of Orange? For what manufactures is Lyons famous? What is its population? Which is the highest town in France? What is said of the inhabitants of Montelimart? In what department is Chambery? What is stated of Autun? For what is Strasburg famed? What took place at Luneville in 1801? Where was the famous Joan of Arc born? Of whom is Sedan the birthplace? For what is Nevers celebrated? Where were the Kings of France formerly crowned? Of what military school was the Emperor Napoleon I. a student? For what is Orleans famous? Where and when was the Emperor Napoleon I. born? What is stated of Troyes? What are the foreign possessions

of France in the West Indies? in Hindostan? in South America? in the Eastern Peninsula?

Between what degrees of latitude and longitude is France situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate in the north? in the central departments? in the south? What is said of the soil? Mention the chief vegetable productions. What are common fruits in the south? What are the domestic animals? Where is the silkworm brought to great perfection? Name the wild animals. Enumerate the mineral productions. What is the prevalent religion of France? How are the Roman-catholic and Protestant clergy paid? What is the state of education? What are the manners of the people? What is the government of France? What is its population?

S W I T Z E R L A N D

Is bounded on the N. by Germany; W. by France; S. by France and Italy; E. by Italy and Austria.

CANTONS.—Berne, Neufchatel', Fri'burg, Vaud, Gene'va, Valais', Tes'sin, Grisons', U'ri, Unterwal'den (subdivided into Oberwald or Obwalden, and Unterwalden or Nidwalden), Lucerne', Zug, Schweiz, Gla'rus, St Gall, Appen'zell (subdivided into Outer Rhodes and Inner Rhodes), Thurgau', Schaffhau'sen, Zu'rich, Aargau', Basle or Bâle (subdivided into Bâle-Ville and Bâle-Campagne), Soleure'.

MOUNTAINS.—The Rhæ'tian Alps; the Pennine Alps, the Helve'tian Alps, including Great St Bernard, St Got'hard, Schrek'horn, Mount Ro'sa, Sim'plon (over which a grand military road was made by the Emperor Napoleon I.), Mount Ju'ra.

RIVERS.—Rhine; Rhone; A'ar (with its tributaries Reuss and Lim'mat); Inn; Tici'no.

LAKES.—Gene'va, Neufchatel', Bienne', Thun, Brienz',

Lucerne, Zug, Zurich, Wal'tenstadt, Con'stance or Bo'densee', Maggio're, Luga'no.

PRINCIPAL TOWNS.—In BERNE.—Berne 29, the federal town or capital of Switzerland, the birthplace of Haller the poet and physiologist, with a fine cathedral; Thun, near which are the much-frequented baths of Gurnighel.

NEUFCHATEL.—Neufchatel 10, with a castle, the ancient residence of the Princes of Neufchatel: until 1857 this canton was nominally subject to the King of Prussia.

FRIBURG.—Friburg 10, with a cathedral containing a fine organ; Charmey, in the neighbourhood of which is made the famous Gruyere cheese.

VAUD.—Lausanne' 21, surrounded with beautiful scenery: here Gibbon wrote most of his *Decline and Fall of the Roman Empire*; Vevay' 5, the site of a college.

GENEVA.—Geneva 41, the birthplace of Rousseau, Saussure, Bonnet, Necker, and other eminent men, noted for its manufacture of clocks and watches, and for its university, founded by Calvin the Reformer.

VALAIS.—Sion', a very old city; Marti'gny, where the road commences that leads over the Great St Bernard.

TESSIN.—Bellinzo'na; Locar'no, and Luga'no 5, with considerable trade.

GRISONS.—Coire or Chur 7, with a good trade.

URI.—Al'torf, celebrated for the brave and successful resistance of William Tell to the tyranny of the Austrian governor Geisler, in 1307.

UNTERWALDEN.—Stanz; Sar'nen, with a fine church, an arsenal, and a college.

LUCERNE.—Lucerne 12; Sursee, with noted baths in its neighbourhood.

ZUG.—Zug.

SCHWEITZ.—Schweitz 5, surrounded by beautiful scenery; Brun'nen, the entrepôt for goods sent to Italy.

GLARUS.—Glarus 5, with a Reformed college and various manufactures; Mollis and Schwanden, with cotton manufactures; Elm, a small village where the sun is not seen for six weeks in winter, owing to the great height of the mountain of Falsberg.

ST GALL.—St Gall 15, with manufactures of fine cloths and muslins: it takes its name from an Irish missionary who founded a monastery here in the seventh century; Wildhaus, the birthplace of Zuingle the Swiss Reformer.

APPENZELL.—Appenzell; Herisau' 10, with manufactures of muslin and cotton.

THURGAU.—Frau'enfeld, with some manufactures of silk.

SCHAFFHAUSEN.—Schaffhausen 9, with a considerable trade.

ZURICH.—Zurich 20, the birthplace of Gessner and Lavater, and the seat of a university; Wadenschwyl 6, with flourishing manufactures.

AARGAU.—Aarau' 5, a manufacturing town; Ba'den, noted for its baths; Schinznach, also famous for its baths: near it is the Castle of Haps'burg, the cradle of the imperial house of Austria.

BASLE.—Basle 40, a place of great trade, the seat of a university, and the birthplace of the Bernouillis and Euler.

SOLEURE.—Soleure 6, with one of the finest churches in Switzerland.

Switzerland is situated between 45° 50' and 47° 50' N. Lat., and between 6° and 10° 30' E. Long. Its greatest length is 208 miles; its greatest breadth, 156 miles; its superficial extent, about 15,716 square miles. It is the most mountainous country in Europe. The immense chains of the Alps and of Jura, presenting on all sides rocky precipices and everlasting snows and

glaciers, seem to preclude anything like vegetation; there are, however, many fertile valleys, which form a striking contrast to the dreary sterility of the huge mountain-masses which overhang them.

The climate is healthy: the heat of summer is tempered by the cold winds from the snowy summits of the mountains; but the winters are exceedingly severe. The soil, except in some of the valleys, is very poor, but the industry and skill of the people have carried cultivation into the most unpromising places.

The usual kinds of grain are produced, but not in such abundance as to supply the inhabitants; grapes, and some of the finer fruits, are successfully cultivated. Great attention is paid to the breeding of cattle, and to the produce of the dairy. The ibex or rock-goat, and chamois, are met with only in the Alps; deer, and fish of a delicious quality, are found in abundance; the golden or bearded vulture, and the golden eagle, have their eyries in the inaccessible cliffs of the mountains. The mineral productions are iron in vast quantities, silver, copper, lead, rock-crystal in immense masses, and gold in the gravel of the mountain-streams.

The Roman-catholic is the established religion in nine of the cantons, the Protestant in seven. In the remaining six both forms co-exist, but of the whole population not much less than two-thirds are Protestants. Education is widely diffused, especially in the Protestant cantons. The people are simple, sincere, and frank; they are highly distinguished for frugality, honesty, bravery, and an indissoluble attachment to their native country.

The government is that of a federal republic. The Diet or Federal Assembly has two chambers,—a National Council of 120 deputies chosen by the people, and a Senate or State Council of 44 members, or two for each canton. The Federal Council, of seven members, is chosen by the Federal Assembly once every three years. The president and vice-president are elected annually. The Federal Council sits at Berne, which, in 1848, was declared to be the federal town or capital.

The population is 2,510,494.

EXERCISES.—How is Switzerland bounded? Into how many cantons is it divided? Which is the most easterly? the most northerly? the two most southerly? In what canton does the Rhone rise, and through what lake does it flow? What river flows through the lake of Constance? Where does it rise? Where is Mount Jura? Name

the lake in the south-west. Name the two lakes in the south of Tessin. Name the lake in the north-east of Switzerland. Where is Mount Simlon, and who formed a grand military road over it? Which is the most populous town in Switzerland? From whom does the canton of St Gall take its name? On what river is Berne situated, and what is stated of it? For what is Basle celebrated? Who were born there? How is Zurich situated, and what is said of it? To what sovereign was the canton of Neuchatel nominally subject until 1857? For what is Altorf celebrated? How is Geneva situated, and what celebrated persons were born there? For what is it noted? What is stated of Schweitz? In what canton is Charmey, and what is made in its neighbourhood? What great book was written at Lausanne? What is stated of Elm? What is the population of Berne? of Basle?

Between what degrees of latitude and longitude is Switzerland situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? What are the vegetable productions? Enumerate the mineral productions. What are the established religions? What proportion of the population is Protestant? In what state is education? What are the manners of the people? For what are they highly distinguished? What is the form of government? How many chambers are there in the Federal Assembly? What is the number of members in the Federal Council? Where does it meet? What is the population of Switzerland?

BELGIUM

Is bounded on the N. by Holland; W. by the German Ocean and France; S. by France; E. by Germany.

DIVISIONS.—Antwerp, East Flanders, West Flanders, Hainault, South Brabant, Namur, part of Luxembourg, Liege, part of Limburg.

RIVERS.—Scheldt (with its tributaries Haine, Lys, Den'der and Dyle); Meuse or Maas (with its tributaries Semoy, Sam'bre, and Ourth).

PRINCIPAL TOWNS.—In ANTWERP.—Antwerp 120, the chief commercial city of Belgium, with a magnificent cathedral, in which are some of the finest paintings of the famous Rubens; Malines or Mechlin 35, noted

for its manufactures of cloth, hats, and lace; Lierre' 15, celebrated for its brass-foundries; Turnhout' 13.

EAST FLANDERS.—Ghent or Gand 123, built on twenty-six islands, with extensive commerce and manufactures: it is the birthplace of Charles V. of Germany, and the seat of a university; St Nich'olas 24, with considerable manufactures of pins, ribbons, and cotton; Alost 20, with a good trade in corn; Dendermonde' 9, with a strong castle; Oudenarde' 6, where the Duke of Marlborough and Prince Eugene defeated the French in 1708; Lok'eren 17; Renaix' 12.

WEST FLANDERS.—Bru'ges 51, with considerable manufactures, commerce, and shipbuilding yards; Ostend' 17, from which packets sail to London, etc.; Courtray 23, noted for its manufactures and commerce; Ypres 17; Dix'mude; Nieu'port, a fortified town; Pop'eringhe 11; Roulers' 12.

HAINAULT.—Mons 27, a strongly-fortified city in the neighbourhood of extensive coal-mines; Tour'nay 31, noted for its manufactures of camlets, carpets, and porcelain; Charlero'i 13; Fontenoy', where the French, commanded by Marshal Saxe, defeated the British in 1745.

SOUTH BRABANT.—Brus'sels 187, the capital of Belgium, noted for its lace and carpets: here Charles V., Emperor of Germany, abdicated his throne in 1555; Louvain' 33, with a university; Tir'lemont 12, with manufactures of woollen cloth; Wa'terloo, where Napoleon I. was finally defeated by the Duke of Wellington on the 18th of June 1815.

NAMUR.—Namur 26, noted for its manufacture of cutlery and arms; Din'ant 6, in the neighbourhood of excellent marble-quarries; Phil'ippeville, near which are iron-mines.

PART OF LUXEMBURG.—Ar'lon 5, with several founderies; Bouil'lon.

LIEGE.—Liege' 102, famous for its manufactures, commerce, and coal-mines; Ver'viers 30, noted for its manufactures of cloths, kerseymeres, and machinery; Spa 5, celebrated throughout Europe for its mineral waters; Theux, famed for its foundery and its quarry of black marble; Huy 11, with extensive iron-works and paper-mills.

PART OF LIMBURG.—St Tron 12, famous for its manufactures of arms and beautiful lace; Ton'gres 6.

Belgium is situated between 49° 30' and 51° 30' N. Lat., and between 2° 30' and 6° 5' E. Long. Its length from N.W. to S.E. is 195 miles; its breadth from N.E. to S.W., 127 miles; its superficial extent, about 11,402 square miles. The general aspect of the country is a level plain, but on the southern borders it rises into high and rugged eminences. The climate is more humid than that of the south of England; but it is in general temperate and healthy. The soil, where not naturally fertile, has been so highly improved that it produces the most luxuriant and abundant crops.

All kinds of grain and fruit, tobacco, hemp, madder, flax, and hops, are successfully cultivated. The horses of Flanders, though too sluggish for the saddle, are admirably adapted for draught; the other domestic animals are excellent in their kind: game is abundant in most parts of the country. The chief mineral production is coal of excellent quality and in immense quantity. Iron is abundant, besides which, copper, lead, zinc, manganese, pyrites, calamine, sulphur, and alum, are found in considerable quantities; building materials, such as sandstone, limestone, granite, marble, etc., are plentiful; millstones and grindingstones are found in the quarries of Liege and Namur.

The established religion is the Roman-catholic, but all other creeds are tolerated. Education is in general attended to with great solicitude. The people nearest to Holland partake of the proverbial phlegm of the Dutch, while those on the French frontier are possessed of more vivacity. They are skilful, industrious, and persevering.

The government is a constitutional monarchy, with a hereditary king, a senate, and a chamber of deputies. The senate is elected for eight years, and the chamber for four.

The population in 1866 was 4,829,320.

EXERCISES.—What are the boundaries of Belgium? Name its divisions. Which is the most southerly? the most westerly? What divisions border on France? Through what divisions does the Scheldt flow? the Meuse? Name the tributaries of the Scheldt; of the Meuse. What are the towns in South Brabant? What is the capital of Belgium, and what is stated of it? What occurred at Waterloo, and when? at Oudenarde? at Fontenoy? For what is Malines noted? Tournay? Courtray? Lierre? Namur? Theux? Verviers? Liege? What town is celebrated throughout Europe for its mineral waters? In what division is it? Name the towns in East Flanders? What is stated of Ghent? of Bruges? From what town do packets sail to London, etc.? What is stated of Antwerp? For what is St Tron famous? What is the population of Brussels? of Ghent? of Antwerp? of Liege? of Bruges?

Between what degrees of latitude and longitude is Belgium situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Mention the vegetable productions. What are the domestic animals? Enumerate the mineral productions. What is the established religion? In what state is education? What are the manners and character of the people? What is the government, and of what does it consist? What is the population of Belgium?

HOLLAND or THE NETHERLANDS

Is bounded on the N. and W. by the German Ocean; S. by Belgium; E. by Germany.

DIVISIONS.—North Holland, South Holland, Zea'-land, North Brabant, U'trecht, Guel'derland, Overys'sel, Drenthe, Gro'ningen, Fries'land, part of Limburg, part of Luxemburg.*

SEAS and BAYS.—Zui'der Zee, Dol'lart Bay, Lau'wer Zee.

ISLANDS.—Voorn, Ys'selmonde, Go'ree, Over Flac'-kee, Scho'wen, North Beve'land, Wal'cheren, South Beveland, Tho'len; Ame'land, Schel'ling, Vlie'land, Tex'el, etc.

RIVERS.—The Rhine (with its branches Leck and Waal); Ys'sel, Vecht, Maas or Meuse.

* Luxemburg, of which the King of the Netherlands is the Grand Duke, has a constitution and legislature of its own.

PRINCIPAL TOWNS.—In **NORTH HOLLAND.**—Am'ster-dam 263, the capital of Holland, built on piles of wood, one of the greatest commercial cities in Europe; Haarlem 29, with the largest church in Holland, and an organ supposed to be the finest in the world, containing 8000 pipes and 68 stops: here the Dutch assert the art of printing to have been invented by Lawrence Coster in 1440; Saardam 12, where Peter the Great of Russia worked as a common ship-carpenter to learn the art of shipbuilding; Alkmaar' 12, with an extensive trade in butter and cheese; Hoorn 10, with large ship-building yards; Camperdown', off which Admiral Duncan defeated the Dutch fleet, 11th October 1797.

SOUTH HOLLAND.—Rot'terdam 114, next to Amsterdam the city of largest trade in the kingdom, the birthplace of the learned Erasmus, to whose memory a bronze statue has been erected by his fellow-citizens; Delft 22, the birthplace of the celebrated Grotius, noted for its earthenware; the Hague 86, one of the best built cities in Europe, the seat of the Dutch government; Ley'den 37, famous for its university and learned men; Dort or Dor'drecht 24, where, in 1618-19, the famous Synod was held which condemned the doctrines of Arminius; Briel, the birthplace of the famous Dutch Admiral Van Tromp; Hel'voetsluys; Schiedam' 17, celebrated for its gin; Gou'da 15, noted for its cheese.

ZEALAND.—Mid'dleburg 16; Flush'ing 8, the birthplace of the renowned De Ruyter, with a fine harbour and magnificent docks; Veere or Campvere', which once sent a member to the General Assembly of the Church of Scotland; Zierik'see 7, noted for its oysters; Goes 5.

NORTH BRABANT.—Bois'-le-Duc' 24, noted for its manufacture of musical instruments and ribbons; Bre'da 15, with a royal military academy, and a fine cathedral;

Ber'gen-op-Zoom' 6, a very strong fortress; Tilburg' 17, with considerable cloth manufactures; Oosterhout 9.

UTRECHT.—Utrecht 57, the seat of a university: here a treaty was concluded in 1579, which secured the independence of the Seven United Provinces; A'mersfort 13, a manufacturing town.

GUELDERLAND.—Arnheim' 29, a commercial town; Nim'eguen 22; Zut'phen 15, at the siege of which the gallant and accomplished Sir Philip Sidney was killed in 1591; Harderwyk 6.

OVERYSSEL.—Zwoll 20; Deven'ter 18, noted for its hardware and beer; Campen' 15.

DRENTHE.—As'sen; Mep'pel 7; Koeverden.

GRONINGEN.—Groningen 38, the seat of a university; Winschoten.

FRIESLAND.—Leeuwar'den 25, with a considerable trade; Har'lingen 9; Sneek 7, noted for its manufacture of wooden clocks.

PART OF LIMBURG.—Mae'stricht 29, a strongly-fortified town; Venloo 7.

PART OF LUXEMBURG.—Luxemburg 12, formerly one of the strongest fortresses in Europe; it was dismantled in 1867.

FOREIGN POSSESSIONS.—*In Asia*.—Java, parts of Sumatra and Bor'neo, and the Moluccas or Spice Islands. *In Africa*.—El Mi'na, and some small forts on the coast of Guinea. *In South America*.—Surinam' or Dutch Guiana. *In the West Indies*.—Curaço'a, Buen Ayre, part of St Mar'tin's, Sa'ba, and St Eusta'tia.

Holland is situated between 51° 15' and 53° 30' N. Lat., and between 3° 20' and 7° 12' E. Long. Its greatest length is about 190 miles; its greatest breadth, 123 miles; its superficial extent, 13,627 square miles. The general aspect is flat and marshy, a great part of the country being from twenty to forty feet below the level of the sea.

The climate, in consequence of the low situation of the country and its exposure to the sea-breezes, is foggy and humid, except during the four winter months, when the prevailing easterly winds dissipate the fogs, and dry the air. The soil is excellent, and is everywhere highly productive from the care bestowed upon its cultivation.

In the north, the chief vegetable productions are wheat, flax, hemp, and madder; in the south, besides these, tobacco, and a great variety of fruits are cultivated. In every part of the country there are vast meadows of the most luxuriant pasturage. Great numbers of cattle are reared, the produce of the dairy forming one of the staple articles of export. There are no mineral productions of note, except iron, which is plentiful in the province of Luxemburg.

There is no dominant religion: the majority of the inhabitants are Calvinists; the Roman-catholics are next in number, but many other professions are met with, and are freely tolerated,—the clergy of almost all denominations being supported by the state. In scarcely any country has education been attended to with more solicitude. Schools are established in every parish; and the universities of Leyden, Utrecht, and Groningen, so justly celebrated, have produced some of the most learned men of modern times. The manners of the people are grave and cold; their persevering industry, frugality, and strict business habits have long been proverbial.

The government is a constitutional monarchy; the legislative power being vested in the king and two chambers, called the States-General.

The population in 1865 was 3,735,682. The population of the Dutch colonies in 1864 was 19,658,910.

EXERCISES.—How is Holland bounded? What are its divisions? Which is the most westerly? What are the two most northerly? Name the divisions that border on the Zuider Zee. Where is Dollart Bay? Zuider Zee? Lauwer Zee? How is the Texel island situated? Voorn? Walcheren? In what direction does the Rhine flow, and into what does it fall? Name its branches? What is the capital of Holland? What is stated of it? Which is the second commercial city in the kingdom? What learned man was born there? What is the population of Amsterdam? Rotterdam? the Hague? Utrecht? Leyden? What occurred off Camperdown, and when? For what is Leyden famous? Bois-le-Duc? Sneek? Gouda? Schiedam? What took place at Utrecht? Where was Sir Philip Sidney killed, and when? What is stated of Haarlem? Delft? Dort? Where was Admiral Van Tromp born? For what is Zierikzee noted? Where

is the seat of government? Who worked for some time as a ship-carpenter at Saardam? Where was the renowned De Ruyter born? What is stated of Luxemburg? Name the foreign possessions of Holland in Asia; in Africa; in South America; in the West Indies.

Between what degrees of latitude and longitude is Holland situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Mention the vegetable productions. What are reared in great numbers? What forms one of the staple articles of export? Name the chief mineral production. Of what religion are the majority of the inhabitants? What denomination of Christians is next in number? In what state is education? Name the universities. What are the manners of the people? What is the government of Holland? In whom is the legislative power vested? What is the population of Holland? What is the population of the Dutch colonies?

DENMARK

Is bounded on the N. by the Skager Rack; W. by the German Ocean; S. by Sleswick Holstein; E. by the Baltic, the Sound, and the Cattegat.

DIVISIONS.—North Jut'land; Zealand, Moen, and Sam'soe; Born'holm; Fu'nen, Lan'gèland, and Aeroe; Laa'land, Fal'ster, etc.

GULFS, etc.—The Liim Fiord, Ring Kio'bing Fiord, Nis'sum Fiord, Jam'mer, Tan'nis, Vixo.

ISLANDS.—*In the Cattegat and Baltic.*—Zealand, Fu'nen, Laaland, Falster, Moen, Aeroe, Lan'gèland, Born'holm, A'mak, Samsoe, An'holt, Lessoe, etc. *In the Atlantic.*—The Fa'roe Islands, twenty-two in number, of which seventeen are inhabited; Thors'haven in Stromoe is the principal town; Iceland 70, in which are thirty known volcanoes, the most celebrated being Mount Hec'la, 5110 feet high, with the famous hot-springs called the Geysers: the chief town is Reik'ivak.

STRAITS.—The Sound, the Great Belt, the Little Belt.

CAPE.—Skaw.

LAKE.—Arre, *in Zealand*.

PRINCIPAL TOWNS.—In NORTH JUTLAND.—Aal'borg 10, noted for its herring-fishery; Aar'huus 11, with a considerable trade; Vi'borg 5, a very ancient city; Colding.

THE ISLANDS.—Copenha'gen 155, in Zealand, the capital of Denmark, a handsome and strongly-fortified city, with a celebrated university, a royal library, a museum of national antiquities, and a railway to Elsinore'; Ros'kilde, the ancient capital, with a cathedral containing the tombs of the kings of Denmark; Elsinore' 8, on the narrowest part of the Sound; Fred'ericksborg, with a fine palace; Stege, capital of Moen, on its west coast; Odensee' 14, in Funen, with a cathedral, and several manufactures; Ny'borg, on the Great Belt, with a strong citadel and shipbuilding yards; Rudkio'bing 3, in Lan'geland, is enclosed by walls, and has some shipbuilding docks; Aeroeskio'bing 2, capital of Aeroe in the Little Belt; Naks'kov 4, in Laaland, has a considerable trade in corn; Nykio'bing 3, in Falster, on the Giddborg.

FOREIGN POSSESSIONS.—*In the West Indies*.—St Thomas, St John, and San'ta Cruz or St Croix'. *In the Arctic Ocean*.—Greenland or Danish America.

Denmark is situated between 54° 30' and 57° 44' N. Lat., and between 8° 5' and 12° 37' E. Long. Its length from south to north is 200 miles; its breadth from west to east, 180 miles; its superficial extent, about 14,800 square miles. The general appearance of the country is level, the few hills by which it is marked are mere undulations.

The climate is moist but temperate, and, generally speaking, not unhealthy, although the winters are sometimes very severe.

Denmark is but scantily wooded, the few forests that exist being chiefly confined to the east coast of the peninsula and the islands of Zealand and Funen. The cultivation of the soil occu-

pies the majority of the people, and the principal crops raised are rye, barley, oats, pease, beans, potatoes, and hops. In North Jutland cattle are reared on an extensive scale. Owing to the absence of coal and river water-power, there are but few manufactures.

The established religion is the Lutheran, but all others are tolerated. Education is well cared for; and the law requires that every child between seven and fourteen shall attend some public school. The manners and customs of the higher orders of the Danes are nearly the same with those of persons of the same rank in other countries of Europe.

From 1660 till 1834 the government of Denmark was an absolute monarchy; in the latter year King Frederick VI. granted a representative constitution, which was confirmed and extended by King Frederick VII. in 1848.

The population in 1860 was 2,605,024; in 1865, it was 1,608,095.

EXERCISES.—What are the boundaries of Denmark? Name and point out its divisions. Which is the most southerly? the most northerly? Where is the Skaw? the Sound? the Liim Fiord? the Great Belt? the Little Belt? What is the capital of Denmark, and how is it situated? What is stated of it? What are the towns in North Jutland? How is Elsinore situated? Aalborg? What island is near Copenhagen? What is the number of the Faroe Islands? How many are inhabited? In what island is Mount Hecla, and what is its height? What is the chief town in Iceland? What is stated of Roskilde? of Nyborg? What are the foreign possessions of Denmark?

Between what degrees of latitude and longitude is Denmark situated? What are its length, breadth, and superficial extent? What is the general appearance of the country? What is the nature of the climate? In what employment is the majority of the people engaged? Mention the vegetable productions. Name the part of Denmark where cattle are largely reared. What is the established religion? In what state is education? What was the government of Denmark previous to 1834? What is it now? What is the population?

NORWAY AND SWEDEN.

NORWAY

Is bounded on the N. by the Arctic Ocean; W. by the Arctic and Atlantic Oceans; S. by the Skager Rack; E. by Sweden.

DIVISIONS.—Fin'mark, Nord'land, Dron'theim, Ber'gen, Ag'gerhuus or Christia'nia, Christ'iansand.

BAYS.—West Fiord, Drontheim, Hardanger Fiord, Bukke Fiord, Christiania.

ISLANDS.—Ma'geroe, Loffo'den Isles (south of which is the dangerous whirlpool called the Mal'strom), Vig'-ten Isles, Hit'teren, Bommel, etc.

CAPIES.—The North Cape, the Naze.

MOUNTAINS.—Ko'len, Dov'refield, Lan'gefield.

RIVERS.—Ta'na, Glommen, Drammen, Lau'ven.

LAKES.—Fœ'mund, Mios'en, Rands, Ty'ri.

PRINCIPAL TOWNS.—In FINMARK.—Tromsøe, on an island, with a newspaper, perhaps the most northerly journal in the world; Altengaard'; Ham'merfest, with a considerable trade; Ward'huus.

NORDLAND.—Alstahoug, the most northerly bishop's see in Europe.

DRONTHEIM.—Drontheim or Trondheim 16, formerly the residence of the Norwegian kings; Ro'raas, in the neighbourhood of rich copper-mines.

BERGEN.—Bergen 26, with a safe harbour, and a flourishing commerce.

AGGHERHUUS or CHRISTIANIA.—Christiania 39, the capital of Norway, with a university, and considerable trade; Fred'erickshall 7, at the siege of which Charles XII. of Sweden was killed in 1718; Fred'erickstad, a

fortified town; Drammen 10, with a great export trade in timber; Kongsberg 5, in the neighbourhood of a celebrated silver-mine; Fred'ericksvorn, the naval arsenal of Norway.

CHRISTIANSAND.—Christiansand 10, with a fine cathedral, and considerable trade; Stav'anger 12, with a fine harbour,

Norway is situated between 58° and 71° 10' N. Lat., and between 5° and 31° E. Long. Its length, from the Naze to the North Cape, is about 1100 miles; its breadth varies from 200 to 50 miles; its superficial extent is about 123,297 square miles. With the exception of Switzerland, Norway is the most mountainous country in Europe, particularly on the side next Sweden. The scenery in many places is very beautiful and picturesque. A great proportion of the country is covered with pine forests; there are many lakes; and the whole coast is deeply indented with bays and fiords or friths.

The cold of winter in the interior and north of Norway is intense; on the coast the temperature is milder: the summer is delightful, though very warm; generally the climate is healthy, and favourable to long life. The extent of arable land is limited, but in some districts there are tracts of great fertility.

The chief crops are oats, barley, flax, and hemp. The principal wild animals are the bear, wolf, fox, lynx, and lemming; the last being a kind of rat, peculiar to the Kolen Mountains, whence vast swarms migrate to the coast, destroying in their progress almost all vegetation. The chief domestic animals are the rein-deer, which constitutes the principal wealth of the Laplander, and the horse, which, though small, is swift, hardy, and sure-footed. Norway is rich in minerals, particularly iron, copper, and silver.

The established religion is the Lutheran, but all other creeds are tolerated. Elementary education is pretty generally diffused. The Norwegians possess much spirit and fire in their manner; they are lively, frank, brave, and hospitable, but addicted to intoxication.

Norway, formerly a part of Denmark, was united to the crown of Sweden in 1814, but is governed by its own laws.

The population in 1865 was 1,701,478.

EXERCISES.—How is Norway bounded? What are its divisions? Which is the most northerly? the most southerly? Where is the island Mageroe? In what direction does the Tana flow, and into what does it fall? Where are the Loffoden Isles? What is south of them? Where is Christiania Bay? the North Cape? the Naze? Where are the Langefeld Mountains? Kolen? Dovrefield? In what direction do the Glommen and Drammen flow? Name the principal lakes in Norway. In what division are they situated? What is the capital of Norway? What is stated of it? Where is the naval arsenal of Norway? What was Drontheim formerly? What occurred at Fredericks hall, and when? For what is Stavanger noted? What is the population of Christiania? Bergen? Drontheim? What is remarkable about Tromsøe?

Between what degrees of latitude and longitude is Norway situated? What are its length, breadth, and superficial extent? What is the general appearance of the country? With what is a great proportion of the country covered? What is the nature of the climate and soil? Mention the vegetable productions. What are the principal wild animals? Name the chief domestic animals. Name the chief mineral productions. What is the established religion? In what state is education? What is the character of the Norwegians? Of what country was Norway formerly a part? When was Norway united to Sweden? How is it governed? What is the amount of the population?

SWEDEN

Is bounded on the N. by Russian Lapland and Norway; W. by Norway and the Cattegat; S. by the Baltic; E. by the Baltic, the Gulf of Bothnia, and Russia.

DIVISIONS.—Norrland (including Swedish Lapland and Bothnia); Svealand or Sweden Proper; Gothland.

ISLANDS.—Oland, Gothland (in which is the town of Wisby).

RIVERS.—Tor'nea, Lu'lea, Pi'tea, U'mea, Dahl, Klar, Mota'la, Go'tha.

LAKES.—Wen'er, Wet'ter, Mae'ler, Hiel'mar.

PRINCIPAL TOWNS.—In NORRLAND.—Her'nosand where books for the use of the Laplanders are printed: Lulea; Umea, with a thriving trade; Pitea.

SWEDEN PROPER.—Stock'holm 133, the capital of

Sweden, a fine city, built partly on the mainland, partly on islands, with an excellent harbour; Up'sal 9, long the residence of the Swedish kings, the see of an archbishop, and the seat of a university, in which the famous Linnæus taught; Gefle 12, with a considerable trade; Fah'lun, surrounded by rich copper-mines; Nykop'ing 5, near which are mines of cobalt; Carlstadt' 5; Danne-mo'ra, famous for its mines, which yield the best iron in the kingdom; Orebro' 8, with woollen and stocking manufactures.

GOTHLAND.—Got'tenburg 42, the most commercial city in Sweden; Linkop'ing 6, with a fine cathedral; Mal'mo 22, with considerable trade and manufactures; Lund 9, the seat of a university; Carlscro'na 16, the principal station of the Swedish navy; Cal'mar 9, noted for the treaty of 1397, by which Norway, Sweden, and Denmark were united; Norrkop'ing 22, a commercial and manufacturing town; Jonkop'ing 9, with considerable commerce.

FOREIGN POSSESSION.—Island of St Bartholomew, in the West Indies.

Sweden is situated between 55° and 69° N. Lat., and between 11° and 24° E. Long. Its length is about 1000 miles; its breadth, nearly 200 miles; its superficial extent, about 170,621 square miles. No country is diversified, in a more singular manner, by large lakes, gloomy forests, wild cataracts, craggy precipices, and verdant valleys.

The climate is excessively cold in winter; but in summer the heat is so great, and vegetation so rapid, that in some places corn is sown and reaped within three months. The atmosphere is generally pure, and the ravages of contagious diseases are rarely felt. The soil is in general poor, but agriculture has of late been much improved.

The chief crops are oats, barley, rye, wheat in the southern provinces, and potatoes. The animals, both wild and tame, are nearly the same as those of Norway. Sweden has long been famous for its mineral wealth; its copper and iron are particularly celebrated. There are mines of gold, silver, lead, cobalt, &c.

Lutheranism is the established religion. Elementary education is generally diffused. There are many gymnasia or classical schools, and two universities, Upsal and Lund. The Swedes are generous, enterprising, hardy, and brave, but, like the Norwegians, too much addicted to intemperance.

The government is a limited hereditary monarchy.

The population in 1865 was 4,114,141.

EXERCISES.—How is Sweden bounded? Name its divisions. Which is the most southerly? Where are Lakes Wener and Wetter? Where is the island of Gothland? What is its chief town? In what direction do the Tornea and Lulea flow, and into what do they fall? What does the Gotha unite? Where is Lake Maelar? How is Stockholm situated? What is stated of it? For what is Danne-mora famous? Which is the most commercial city in Sweden? Which is the principal station of the Swedish navy? For what is Calmar noted? What is stated of Hernosand? Who was a professor in the university of Upsal? What foreign possession has Sweden? What is the population of Stockholm? Gottenburg? Carlscrona?

Between what degrees of latitude and longitude is Sweden situated? What are its length, breadth, and superficial extent? What is the general appearance of the country? What is the nature of the climate and soil? Mention the vegetable productions. What is stated of the mineral productions? What is the established religion? In what state is education? What is the character of the Swedes? What is the government of Sweden? What is its population?

RUSSIA IN EUROPE

Is bounded on the N. by the Arctic Ocean and Norway; W. by Sweden, the Gulf of Bothnia, the Baltic Sea, Prussia, Austria, and Turkey; S. by Turkey, the Black Sea, and Caucasus Mountains; E. by the Caspian Sea, the river Ural, and the Ural Mountains.

DIVISIONS.—Russia in Europe contains sixty-five governments and territories, viz. Archan'gel, the Grand Principality of Finland (containing eight governments), Ol'onez, Volog'da, Nov'gorod, St Pe'tersburg or Ing'ria, Rev'el or Estho'nia, Ri'ga or Livo'nia, Courland, Wil'na, Vitebsk, Pskov, Mo'ghilev, Minsk, Grod'no, Kow'no,

the Kingdom of Po'land (containing five governments), Volhy'nia, Tver, Jaroslav', Kostro'ma, Viat'ka, Niz'nei-Nov'gorod, Vlad'imir, Mos'cow, Smolensk', Kalu'ga, Tu'la, Riaz'an, Tam'bov, Pen'za, Tcher'nigov, O'rel, Kursk, Podo'lia, Kiev', Polta'va, Kharkov' or the Uk'raïne, Vo'ronetz, Bessara'bia, Cher'son, Tau'rida with the Crime'a, Eka'terinoslav', the Country of the Don Cos'sacks, Sar'atov, Sim'birsk, Sama'ra, Kaz'an, Perm, O'renburg, Ou'fa, Astracan', and Stavropol', Country of the Cossacks of the Black Sea. The governments of Perm and Orenburg are partly in Europe and partly in Asia. Stavropol', although lying on the European side of the Caucasus, is ranked by the Russians, for administrative purposes, among the provinces of Asiatic Russia.

BAYS AND GULFS.—Tcheska'ia, Archan'gel, One'ga, Kan'dalax, War'anger, Bothnia, Finland, Riga.

ISLANDS.—*In the Arctic Ocean*.—Spitzber'gen, No'va Zem'bla, Wai'gatz, Kalguev'. *In the Baltic*.—A'land, Da'go, Oe'sel.

MOUNTAINS.—Ural, Olonetz, Val'dai Hills, Caucasus.

RIVERS.—Petcho'ra, Mezen', Northern Dwí'na, Onega, Ne'va, Southern Dwina, Nie'men, Vistula, Dnies'ter, Bog, Dnie'per, Don, Kou'ban, Vol'ga or Wolga, the largest river in Europe (with its tributaries O'ka and Ka'ma); Ural.

LAKES.—Lado'ga (the largest lake in Europe), Onega, Il'men, Pei'pus, Sai'ma, Ena'ra.

PRINCIPAL TOWNS.—The following towns are in general situated in the governments of the same name:—

Archangel 29, the chief commercial city in the north of Russia, with a good trade; Hel'singfors 22, in Finland, has a fine harbour, and is strongly fortified; A'bo 17, in Finland; Tor'nea, at the head of the Gulf of Bothnia, with a mountain in its vicinity from which the sun is seen all night at midsummer; Olonetz, where

Peter the Great erected his first dockyard, and Petrozavodsk' 8, famous for its gunpowder-manufactory, cannon-foundry, and iron-works; Vologda 13, with a good trade, and numerous manufactures; Novgorod 17, three hundred years ago one of the most flourishing cities in the north of Europe, but now much decayed.

St Petersburg 546, the capital of Russia, founded by Peter the Great in 1703, one of the best built cities in Europe; Cron'stadt 29, the port of St Petersburg, in the island of Retusa'ri, with a harbour which is the principal station of the Russian Baltic fleet; Revel 25, with a fine harbour and a flourishing trade; Riga 74, with large exports of timber, iron, and hemp; and Dor'pat 14, the seat of the oldest university in Russia; Mit'tau 26, in Courland; Wilna 61, with a fine cathedral; Vi'tebsk 31; Pskov 12; Moghilev 31, with a considerable trade, the see of an archbishop, who is primate of the Roman-catholic Church in Russia; Minsk 27.

Grodno 20; Bia'lystok 6; War'saw 223, the capital of Poland,* and famous for its many heroic but fruitless struggles for independence; Kal'isch 13, one of the finest cities in Poland, with flourishing cloth-manufactures. Ji'tomir 31, in Volhynia; Tver 26, with a palace and cathedral; Jaroslav 32, with manufactures of paper, table-linen, and silk.

Kostroma 22, with considerable trade and manufactures; Viatka 15; Niznei-Novgorod 38, with a great internal trade, and a famous annual fair, which is attended by from two to three hundred thousand people; Moscow 378, the former capital, burned by the inhabitants when occupied by the French in 1812, but since rebuilt;

* In order, apparently, to destroy as much as possible all historical recollections among the Poles, Russia, in 1867, determined that Poland should henceforth be called the "Vistula Province," and that Warsaw should cease to be the capital.

Borodí'no, a village west from Moscow, famous for a sanguinary battle between the French and Russians, 7th September 1812, when nearly 35,000 men were slain on each side; Smolensk 21; Kaluga 35, with extensive manufactures; Tula 38, noted for its manufacture of firearms and cutlery.

Riazan 21, noted for its numerous churches; Tambov 34, with considerable trade and manufactures; Penza 22; Tchernigov 8; Orel 36, with a good trade; Briansk 11, with an extensive manufacture of arms; Kursk 28, famous for its fine fruit; Kamin'iec 18, in Podolia; Kiev 71, once the capital of Russia, the seat of a university, and noted for its annual fairs; Poltava 20, where Charles XII. of Sweden was totally defeated by Peter the Great in 1709; Kharkov 50, with a flourishing commerce; Voronetz 40; in Bessarabia, Kichinev 93; Ben'der 22, for seven years the residence of Charles XII. of Sweden.

Cherson 34, where Howard the philanthropist died, in 1790; Odes'sa 118, a free port, with large exports of grain; Sebas'topol, in Taurida, famous for its siege by the British and French in 1854 and 1855; Eka'terinoslav' 13; Ta'ganrog 20; Tcher'kask 20, inhabited by the Don Cossacks; Saratov 84, with a good trade; Simbirsk 24; Samara 22; Kazan 59, with a university and an extensive trade; Perm 12, and Iekat'erinburg 21, on the Asiatic side of the Urals, celebrated for its mining college; Orenburg 186, the centre of the trade with Bokha'ra; Astracan 45, with extensive commerce and manufactures; Stavropol' 16; Georgievsk.

Russia in Europe is situated between 40° 20' and 71° N. Lat., and between 18° and 60° E. Long. Its length from west to east is 1800 miles; its breadth from north to south, 2070 miles; its superficial extent, 2,044,000 square miles. The whole country,

with the exception of Finland and Lapland, may be considered as level, a great part of it being covered with lakes, forests, marshes, and extensive plains called *steppes*.

The climate shows great diversity of character: in the south it is temperate, but in the north the cold is excessively severe; generally the summers are warmer, and the winters colder, than in similar latitudes of western Europe. The soil, in so extensive a country, must necessarily be exceedingly various; in the middle and south the land is so productive as to yield excellent crops without manure.

The most common crops are rye, oats, flax, and hemp; but in the south fine wheat, millet, and rice are produced, and the vine is cultivated in the Crimea. Sheep are reared in great numbers, and the merino breed has been naturalized in various parts of the country; shawl-wool goats have been introduced. There are camels in Taurida and Cherson. Among the wild animals may be mentioned the lynx, the wolf, the bear, the antelope, the elk, the musk-deer, the musk-rat, the beaver, the ermine, etc. Valuable mines of copper are wrought in Finland and Perm, and mines of iron, in Perm and the neighbourhood of Moscow. Gold is found in Perm, and gold and platinum in the Ural Mountains. There are springs of naphtha in the neighbourhood of Perecop, and in the Isle of Taman, in Taurida; and rock-salt abounds in various provinces.

The established religion is that of the Greek Church, but all others are tolerated. Education is too much neglected, and the people are generally ignorant, and but half-civilized: until 1861, when they were emancipated by a decree of the Emperor, the great body of them were serfs of the nobles. The higher ranks are social and hospitable; the lower classes are much addicted to the use of spirituous liquors and gaming, and the virtue of cleanliness is scarcely known among them.

The government is an absolute hereditary monarchy.

The population of Russia in Europe in 1865 was 67,701,176. The population of Asiatic Russia in 1864 was 8,328,642.

EXERCISES.—What are the boundaries of Russia in Europe? How many governments or territories does it contain? Point them out. Which is the largest? Which the most westerly? Name those that border on Asia. Into what government do the Gulfs of Archangel, Onega, and Tchaskaia extend? What is the largest island belonging to Russia? Where is the Gulf of Finland? Bothnia? Riga? What mountains form part of the boundary between

Europe and Asia? Which is the largest river in Europe? Where does it rise? In what direction does it flow, and into what sea does it fall? Which is the largest lake in Europe? Where is it situated? Where is Lake Enara? Onega? Ilmen? Peipus? Where are the Olonetz Mountains? What rivers flow northward through Archangel? Into what seas do the Don and Dnieper fall? What is the capital of Russia? How is it situated? When and by whom was it founded? What is the chief commercial city in the north of Russia? On what river is it situated? What is stated of Cronstadt? For what is Petrozavodsk famous? Jaroslav? Niznei-Novgorod? Borodino? Tula? Riazan? Dorpat? Iekaterinburg? Sebastopol? On what river is Warsaw? For what is it famous? What is stated of Kalisch? What does Riga export? What is stated of Bender? Where, and when, did Howard the philanthropist die? What town on the Black Sea exports vast quantities of grain? What occurred at Poltava, and in what year? What is stated of Moscow? Where did Peter the Great erect his first dockyard? What is stated of Tornea? What is the population of St Petersburg? Warsaw? Odessa? Riga? Archangel?

Between what degrees of latitude and longitude is Russia in Europe situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate? of the soil? Mention the chief vegetable productions. What are the chief domestic animals? Name some of the wild animals. Enumerate the more valuable minerals. What is the established religion? In what state is education? What is stated of the higher ranks? What of the lower classes? What is the government of Russia? What is the population of European Russia? of Asiatic Russia?

PRUSSIA

Is bounded on the N. by the Baltic and Denmark; W. by France, Holland, and Belgium; S. by Germany and Austria; E. by Russia.

DIVISIONS.—East Prussia, West Prussia, Po'sen or Prussian Poland, Silé'sia, Pomera'nia, Bran'denburg, Prussian Saxony, Westpha'lia, Rhen'ish Prussia, Hohenzol'tern.—*Countries annexed in 1866:* Han'over, Hesse-Cas'sel, Nassau', Lau'enburg, Sles'wick-Holstein', District of Frank'fort.

GULFS.—Cu'rische Haff, Frische Haff, Grass Haff, Gulf of Dant'zic.

LAKE.—Spir'dingsee'.

ISLANDS.—Ru'gen, Use'dom, Wol'lin, Fe'mern.

RIVERS.—Nie'men or Mem'el, Pre'gel, Vistula, Oder (with its tributary the War'tha), Elbe, Ema, Rhine.

PRINCIPAL TOWNS.—In EAST PRUSSIA—Kon'igsberg 100, the seat of a university, and the birthplace of the philosopher Kant; Memel 18, with an extensive trade, particularly in grain and timber; Til'sit 17, where a treaty of peace was concluded between the Emperors of France and Russia in 1807; Pillau'.

WEST PRUSSIA.—Dant'zic 90, with a large trade in the export of corn; Elb'ing 28; Thorn 10, noted as the birthplace of Copernicus the astronomer.

POSEN.—Posen 45, a commercial city, once the capital of Poland; Brom'berg 22.

SILESIA.—Bres'lau 164, the seat of a university, a place of great trade; Glogau' 16, strongly fortified.

POMERANIA.—Stet'tin 71, a strongly-fortified town, the principal seaport of the kingdom; Stral'sund 27, with a good trade in corn; Col'berg 10.

BRANDENBURG.—Berlin' 634, the capital of Prussia, one of the finest cities in Europe, with a celebrated university, and many scientific and literary institutions; Pots'dam 42, containing the palace and tomb of Frederick the Great; Brandenburg 26, with an ancient cathedral, and considerable manufactures; Frank'fort 40.

PRUSSIAN SAXONY.—Mag'deburg 93, one of the strongest fortresses in Europe; Burg 15, famous for its clocks; Halberstadt' 24, a commercial town, with a noble cathedral; Hal'le 46, the birthplace of Handel the musician, with a flourishing university; Merse'burg 12, with a fine cathedral, in which is one of the largest organs in Germany; Eis'leben 10, the birthplace of Martin Luther, the Reformer, in 1483, noted for its copper-mines and founderies; Er'furt 40, Wit'tenbug 11, where Luther and Melancthon were buried.

WESTPHALIA.—Mun'ster 28, where the peace of West-

phalia, which ended the Thirty Years' War, was signed in 1648; Min'den 10, where the British and their allies defeated the French in 1759; Pad'erborn 11.

RHENISH PRUSSIA.—Cologne' 122, a very ancient city, the emporium of the trade between Germany and Holland; Cleves 8; Dus'seldorf 44, a trading town; Bar'men 59, El'berfeld 62, and Cre'feld 53, with extensive manufactures; Aix-la-Chapelle' 64, the favourite residence of Charlemagne and his successors: it is noted for its hot baths, and for treaties of peace concluded here; Bonn 22, the seat of a university; Coblenz' 29, with a great trade in wine; Treves 22, believed to be the oldest town in Germany.

HANOVER.—Hanover 80, the capital, the birthplace of Herschel the astronomer; Got'tingen 13, with a celebrated university, founded in 1734 by King George II.

HESSE-CASSEL.—Cas'sel 40, the capital, consisting of an old and a new town, united by a fine stone bridge across the Ful'da; Mar'burg 8, the seat of a university.

NASSAU.—Wiesba'den 27, the capital, celebrated for its warm baths; Nassau; Weil'burg; Dietz'.

SLESWICK-HOLSTEIN.—Sleswick 12; Flens'borg; Alto'na 46, a flourishing seaport, with a railway to Kiel; Kiel 18, with a university.

LAUENBURG.—Lauenburg, on the right bank of the Elbe, with an extensive transit trade.

FRANKFORT-ON-THE-MAINE 78, formerly one of the four Free Cities of Germany, was ceded to Prussia in 1866.

Prussia is situated between 49° 8' and 55° 50' N. Lat., and between 6° and 22° 50' E. Long. Its length from east to west is 720 miles; its greatest breadth from north to south, about 470 miles; its superficial extent, 136,733 square miles. The general aspect of the country is level.

The climate may, upon the whole, be considered healthy and temperate, although on the borders of the Baltic the winters are exceedingly cold, and the weather variable; the western and

central parts of the kingdom have a milder and less changeable climate. The soil, with the exception of the provinces along the Rhine and Silesia, is in general sandy and unproductive.

Wheat, barley, oats, rye, millet, buckwheat, and pease, are raised in abundance; and in East Prussia the potato is as extensively cultivated as in Ireland. The country has one mineral, almost peculiar to itself, viz. amber, which is chiefly found near Pillau. But Prussia generally contains few minerals.

The established religion is Lutheran and Calvinistic Protestantism, but all other sects are tolerated, and their adherents are admissible to every office in the state. In no country is education more attended to; a school is established by law in every village, to which parents are obliged to send their children. The manners and customs of the Prussians are nearly similar to those of the Germans.

The government is a limited hereditary monarchy.

The population in 1866 was 23,580,710.

EXERCISES—How is Prussia bounded? What are its divisions? Point them out. Which is the most easterly division? Name the divisions that border on the Baltic? Which is to the south, and which to the west, of Posen? Where is Lake Spirdingsee? Curische Haff? Grass Haff? Frische Haff? Where is the island of Rugen? What two rivers fall into the Frische Haff? Through what divisions does the Elbe flow? In what direction, and through what divisions, does the Oder flow? Into what does the Niemen, or Memel, fall? What is the capital of Prussia? What is stated of it? In what division, and on what river, is Königsberg? Who was born there? What took place at Tilsit, and in what year? For what is Dantzic noted? Thorn? Prenzlau? Burg? Driburg? In what division, and on what river, is Breslau? What is stated of it? Where, and when, was Martin Luther born? What is stated of Potsdam? Of what country was Posen once the capital? Of whom was Halle the birthplace? What occurred at Munster, and when? Where was the favourite residence of Charlemagne? For what is it noted? What took place at Minden, and when? What is stated of Cologne? What town is said to be the oldest in Germany? Where were Luther and Melancthon buried? Who was born at Hanover? What is stated concerning Cassel? Wiesbaden? Altona? Frankfort-on-the-Maine? What is the population of Berlin? Breslau? Königsberg? Cologne? Dantzic? Magdeburg?

Between what degrees of latitude and longitude is Prussia situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Name the vegetable productions. What mineral, almost peculiar to itself, does this country produce? What is the established religion? In what state is education? What is the government of Prussia? What is its population?

I T A L Y

Is bounded on the N. by Austria and Switzerland; W. by France and the Mediterranean; S. by the Mediterranean; E. by the Gulf of Venice or Adriatic Sea.

DIVISIONS.—*The Kingdom of Italy*, including Piedmont, Gen'oa, the island of Sardin'ia, Lom'bardy, Par'ma, Mod'ena and Mas'sa, Luc'ca, Tus'cany, Romagna, the Marches, Umbria, Na'ples, the island of Si'cily, and Venetia* or the territory of the late republic of Venice; *The Papal States, or States of the Church*, including Rome, the Campagna, etc.

GULFS.—Genoa, Gae'ta, Naples, Saler'no, Policas'tro, St Eufe'mia, Squilla'ce, Tar'anto, Manfredonia, Venice, Trieste.

ISLANDS.—Corsica, Sardinia, Sicily, Malta (containing the strongly-fortified town of Valet'ta, with a fine harbour), Go'zo, Lip'ari Islands, Ca'pri, Is'chia, El'ba.

STRAITS.—Bonifa'cio, Messi'na, Otran'to.

CAPIES.—Passa'ro, Spartiven'to, Colon'ne, Leu'ca.

MOUNTAINS.—The Alps, the Ap'ennines, Mount Vesu'vius, Mount Et'na.

RIVERS.—Po (with its tributaries Se'sia, Tanar'o, Tici'no, etc.), Ad'ige, Ar'no, Fiumici'no (*Ru'bicon*), Ti'ber, Voltur'no.

LAKES.—Maggio're, Luga'no, Co'mo, Is'eo, Gar'da, Peru'gia (*Thrasime'nus*), Bolse'na, Cela'no (*Fuci'nus*).

PIEDMONT.—Turin' 181, formerly the capital of the kingdom, a finely-built city, the birthplace of Lagrange, and the seat of a flourishing university; Alessan'dria 27, near which is Maren'go, famous for the victory

* Venetia or Austrian Italy was annexed to the Kingdom of Italy in 1866.

gained by Napoleon over the Austrians in 1800; Vercelli 19; Nova'ra 14, where, in 1849, the Austrians defeated the Sardinians under King Charles Albert.

GENOA.—Genoa 128, long the rival of Venice, contains many magnificent buildings, and carries on a great trade: here Columbus, the discoverer of America, was born about 1440; Savona 20, with some manufactures of silk.

ISLAND OF SARDINIA.—Cagliari 28, with a university, and considerable trade; Sassa'ri 23.

LOMBARDY.—Milan 196, the capital of Lombardy, with a magnificent cathedral of white marble; Lodi 20, where, on 10th May 1796, Napoleon Bonaparte gained a great victory over the Austrians; Pavia 29, the ancient capital of Lombardy, and the seat of a university: here, in 1525, Francis I., King of France, was defeated and taken prisoner by the forces of the Emperor Charles V.; Cremona 31, formerly famous for its violins; Brescia 41, with manufactures of silk and cutlery; Bergamo 25, with a great annual fair; Solferino, to the south of the Lake of Garda, where the French under Napoleon III. defeated the Austrians under Francis-Joseph I., in June 1859.

PARMA.—Parma 47, the seat of a university; Piacenza or Placentia 39, a strong town.

MODENA AND MASSA.—Modena 32, with a magnificent palace; Reggio 16; Massa 15; Carrara 18, noted for its quarries of statuary marble.

LUCCA.—Lucca 22, surrounded with elegant villas.

TUSCANY.—Florence 114, now the capital of the Kingdom of Italy, famous for its splendid collection of statues and paintings: it is the native city of Michael Angelo, Dante, and of Amerigo Vespucci, from whom the New World was called America; Leghorn 84, one of the most commercial towns in Europe; Pisa 34,

noted for its mild climate, cathedral, baptistery, and hanging tower: it is the birthplace of Galileo; Sienna 22, where Socinus, the founder of the sect of Socinians, was born; Arezzo 37, the birthplace of Petrarch.

ROMAGNA, THE MARCHES, UMBRIA.—Perugia 44, with some silk manufactures; Loreto 8, long a great resort of pilgrims; Ancona 31, a free port with a fine harbour and considerable manufactures; Sinigaglia 10, with an annual fair, the best frequented in Italy; Ravenna 19, the capital of the Western Empire in the fifth century; Ferrara 28, a strongly-fortified city; Bologna 90, the seat of a university, one of the most ancient in Europe; Urbino 15, the birthplace of Raphael the celebrated painter; Rimini 17, with important remains of antiquity.

NAPLES.—Naples 419, the largest city in Italy, situated on one of the most beautiful bays in the world; Foggia 32, noted for its corn-magazines; Sulmona 15, the birthplace of the poet Ovid; Torre del Greco 9, in the neighbourhood of which is produced the celebrated wine called *Lacrima Christi*; Salerno 21, famed for its ancient school of medicine; Amalfi 7, where the mariner's compass is said to have been invented; Cambraso 14, noted for its cutlery and commerce; Arpino 12, the birthplace of Cicero and Marius; Gaeta 14, with a safe harbour and several ancient remains; Capua 14, a strongly fortified city, where Hannibal wintered after the battle of Cannae; Benevento 19, the ancient *Beneventum*, with the arch of Trajan, and other Roman remains; Brindisi 9 (*Brundisium*), famous in Roman history; Bari 34, a commercial and manufacturing city; Taranto 19, a fortified city; Lecce 18, a commercial city; Reggio 16, almost destroyed by an earthquake in 1783.

SICILY.—Palermo 168, with a great trade; Termini

23, celebrated for its mineral waters; Messi'na 62, with one of the best harbours in Europe, and an extensive commerce; Cata'nia 65, frequently destroyed by earthquakes and the lava of Mount Etna; Syr'acuse 20, the birthplace of the great mathematician Archimedes; Girgen'ti 17, near the ruins of Agrigentum; Trapa'ni 26, with a large coral-fishery; Marsa'la 18, celebrated for its wines.

STATES OF THE CHURCH.—Rome 204, the seat of the Pope, and once the mistress of the West, contains some of the finest buildings and works of art, ancient and modern, in the world: St Peter's is the largest and most magnificent church in existence; Ci'vita Vec'chia 10, a free port with a considerable trade; Velle'tri 12.

VENETIA.—Venice 118, once the capital of the most commercial state in Europe, is built on seventy-two islands, connected by five hundred bridges, and communicating with the mainland by a railway; Pad'ua 54, the birthplace of Livy the Roman historian, and the seat of an ancient university; Es'te 11, the residence, during the middle ages, of the Marquesses of Este, the progenitors of the royal family of Great Britain; Vero'na 59, the birthplace of Pliny the naturalist, with a Roman amphitheatre in fine preservation; Vill'afra'n'ca 6, where a treaty of peace was concluded between the French and Austrians in 1859; Vicen'za 33, noted for its manufacture of silks; Trevi'so 19, with numerous manufactures; Possa'no, a large village, the birthplace of the sculptor Canova; Udi'ne 25, in the vicinity of which is Cam'po For'mio, noted for the treaty of peace signed here between France and Austria in 1797; Man'tua 30, the birthplace of the poet Virgil, and one of the most important fortresses in Europe.

Italy is situated between 37° 56' and 46° 40' N. Lat., and between 6° 40' and 18° 30' E. Long. Its length from N.W. to S.E.

is 700 miles; its greatest breadth in the north is 370 miles, but its mean breadth is about 140 miles; its superficial extent is reckoned at 117,843 square miles. The general aspect is mountainous, diversified, however, with numerous plains of great beauty and fertility.

The climate is various: in the north it is temperate, but in the south the heat in summer is excessive; it is upon the whole mild and healthy, except when that terrible scourge the *malaria*, a kind of noxious air, prevails during the hot season, causing fevers which cut off great numbers of the inhabitants. The soil is in general fertile, and in many places well cultivated, especially in the north, in the neighbourhood of the Po, where irrigation is practised on a very extensive scale.

Besides the various kinds of grain, the country produces in abundance wines, silk, oil, cotton, citrons, pomegranates, oranges, lemons, almonds, raisins, and other delicious fruits. The fine cheese known by the name of *Parmesan* is made in Lombardy and Parma. Of domestic animals, the sheep and horses of Naples have long been famous. Mineral treasures are said to abound, but the mines have been almost entirely neglected; beautiful marble is found in the north, and in the neighbourhood of Sienna and Florence; precious stones are found in the Apennines.

The Roman-catholic religion is established in all the states. In scarcely any country in Europe is the education of the lower classes so much neglected as in Italy. The modern Italians are lively and courteous, with much taste in the fine arts; but they are indolent, revengeful, superstitious, and too much given to robbery and assassination.

The government of the Kingdom of Italy is a constitutional monarchy. In the States of the Church the government is absolute.

The population of the Kingdom of Italy is 24,500,000; and that of the States of the Church about 908,000.

EXERCISES.—How is Italy bounded? Point out its divisions. Which is the most southerly? the most westerly? What does the Kingdom of Italy include? What does Venetia comprehend? What is included in the States of the Church? Name the gulfs on the west of Naples; those on the east and south. Where are Malta and Gozo situated? What isles are north of Sicily? What is the chief town in Malta? Where is Elba? In what division does the Po rise? In what direction does it flow, and into what does it fall?

Through what division does the Arno flow? the Tiber? the Volturno? Name the three capes on the south of Naples. Where are the Straits of Bonifacio? Otranto? Messina? Where are Lakes Perugia? Bolsena? Como? Garda? Where is the Fiumicino? What was its ancient name?

On what river is Turin situated? What is stated of it? For what is Marengo famous? What battle was fought at Novara? What occurred at Lodi, and when? Where was Livy, the Roman historian, born? Columbus, the discoverer of America? Pliny, the naturalist? Canova, the sculptor? For what is Solferino memorable? What is stated of Venice? Genoa? Mantua? Este? Milan? Pavia? Florence? For what is Campo Formio noted? Pisa? Marsala? What treaty of peace was concluded at Villafranca? What is stated of Rome? Sienna? Naples? Where was Raphael, the celebrated painter, born? What is stated of Catania? Amalfi? Bologna? Name the birthplace of Cicero and Marius; of Archimedes. What is the population of Naples? Milan? Rome? Genoa? Turin? Venice?

Between what degrees of latitude and longitude is Italy situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate? What of the soil? Mention the vegetable productions. Where is Parmesan cheese made? What domestic animals have long been famous? What is stated of the mineral treasures? Where is beautiful marble found? What is the established religion? In what state is education? What are the manners of the people? What is the government of the Kingdom of Italy? of the States of the Church? What is the population of Italy?

TURKEY IN EUROPE

Is bounded on the N. by Russia and Austria; W. by Dalmatia and the Gulf of Venice; S. by Greece, the Archipelago, the Dardanelles, the Sea of Marmora, and the Straits of Constantinople; E. by Russia and the Black Sea.

DIVISIONS.—Roumelia (including Thrace and Macedonia); Bulgaria; Thessaly; Albania; Bosnia (including Herzegovina and Turkish Croatia). *Tributary States:* Roumania (Moldavia and Wallachia); Serbia; Montenegro.

GULFS.—Sa'ros, Contes'sa, Mon'te San'to, Cassan'dra, Saloni'ca, Vo'lo, Ar'ta, Avlo'na or Valo'na, Duraz'zo.

ISLANDS.—Lem'nos, Im'bros, Samothra'ki, Tha'sos, Can'dia (containing a town of the same name).

STRAITS.—The Bos'porus, or Straits of Constan'tino'ple; the Hel'lespont or Dardanelles'.

CAPIES.—Mon'te San'to, Drepa'no, Cassan'dra or Pailou'ri.

MOUNTAINS.—Bal'kan or Hæ'mus, Rho'dope, A'thos, Olym'pus, Pe'lion, Os'sa, Pin'dus.

RIVERS.—Dan'ube (with its tributaries Save, Mora'va, Se'reth, and Pruth); Marit'za; Var'dar; Salam'bria (*Pe'neus*), Drin.

LAKES.—Jani'na, Scuta'ri, Taki'nos, Kasto'ria.

PRINCIPAL TOWNS.—In MOLDAVIA.—Jas'sy 30, the see of a Greek archbishop; Galatz' 30, with a great trade; Ismail' 25, celebrated for its siege and capture by the Russians in 1790: it was restored to Turkey in 1856 by the Treaty of Paris; Ok'na, with valuable salt-mines.

WALLACHIA.—Bu'charest 60, with a considerable trade; Ter'govist 5.

BULGARIA.—Wid'din 25, the residence of a Turkish pasha; Nicop'oli 10, the see of a Greek archbishop; Sisto'va 20, with manufactures of cotton; Rust'chuk 30, with a considerable trade in corn, cloth, and indigo; Silis'tria 20, a fortified town, which was unsuccessfully besieged by the Russians in 1854; Var'na 25, a strong seaport, where the British and French forces embarked in 1854 to invade the Crimea; Schum'la 50, a very strongly fortified town; Sophi'a 30.

SERVIA.—Belgrade' 30, the capital; Semen'dria 12; Gladova.

BOSNIA, embracing CROATIA and HERZEGOVINA.—Bos'na-Serai'o 70, with manufactures of lances, daggers,

and other arms; Traw'nik 9; Zwor'nik 10, in the neighbourhood of which are lead mines; Bihacz'; No'vi 8; Mos'tar 12, noted for its bridge across the Naren'ta.

MONTENEGRO.—Cet'tigne, the capital and seat of government.

ALBANIA.—Jani'na or Joanni'na 36, where Ali Pasha was assassinated in 1822; Duraz'zo 5, a seaport; Scuta'ri 40, a fortified town, with woollen manufactures.

ROUMELIA, including THRACE and MACEDONIA.—Constantinople 1,075,000, the capital of the Turkish Empire, so called from Constantine the Great, who, in the year 330, made it the seat of the Roman Empire in the east: its ancient name was Byzantium: by the Turks, who took it 1453, it is now called Stamboul; Adriano'ple 140, the second city of the empire, built by the Roman Emperor Adrian, from whom it takes its name; Philippop'oli 40, founded by Philip, King of Macedon, with manufactures of cotton, cloth, and silk; Gallip'oli 50, with a considerable trade in leather; Salon'ica (*Thessaloni'ca*) 70, next to Constantinople the most commercial city in European Turkey: to the westward are the ruins of Pel'la, the birthplace of Alexander the Great; Dra'ma, with thriving manufactures, near which is Philip'pi, famous for the great battle in which Brutus and Cassius were defeated by Augustus and Antony; Se'res 30, noted for its manufactures of towels and other kinds of strong linen cloth.

THESSALY.—Laris'sa 25, noted for its red dye; Pharsa'lia 5, famous for the victory gained by Julius Cæsar over Pompey.

Turkey in Europe is situated between 39° and 48° 15' N. Lat., and between 15° and 30° E. Long. Its greatest length, from the western border of Croatia to the mouths of the Danube or to the Channel of Constantinople, is about 700 miles; its greatest breadth, from the northern boundary of Greece to the north-east frontier of Moldavia, about 650 miles; its superficial extent,

about 210,000 square miles. With the exception of the provinces on the north of the Danube, and the extensive tract watered by the Maritza and its tributaries, Turkey in Europe may be regarded as a mountainous country.

The climate, though subject to considerable variety, is in general delightful. The soil, except in the mountain-districts, is naturally very fertile; but agriculture in most parts has been much neglected.

Among the vegetable productions may be mentioned wheat, maize, millet, tobacco, flax, hemp, wine, coffee, oranges, lemons, citrons, pomegranates, almonds, etc. The fallow-deer, the roe, and the wild-boar, are found in the forests; the principal carnivorous animals are the wolf, the fox, and the bear; the horses of Theessaly retain their ancient celebrity, and the sheep of Wallachia have been long noted for their spiral horns.

The established religion is the Mohammedan; but a large proportion of the inhabitants are Christians of the Greek Church, and there are, besides, many Jews and Armenians. Literature and science are in a very backward state. The Turks are grave and sedate in their demeanour, haughty, indolent, and bigoted, but brave and hospitable.

The government is an absolute monarchy, except in the Danubian Principalities, where constitutional government was established in 1858, under a prince chosen by the inhabitants, subject to the approval of the Sultan.

The population of Turkey in Europe in 1865 was estimated at 16,000,000; of Turkey in Asia, at 16,000,000; of Turkey in Africa, at 5,000,000.

EXERCISES.—What are the boundaries of Turkey in Europe? Name and point out its divisions. Which is the most northerly? the most southerly? the most westerly? What division lies between Roumelia and Wallachia? Where is the Gulf of Arta? Avlona? Durazzo? Where is Candia? Lemnos? What seas do the Straits of Constantinople unite? Where is the Gulf of Saros? Where are the Balkan Mountains? Pindus? Rhodope? Through what division does the Maritza flow, and into what does it fall? the Vardar? the Salambria? What river forms the boundary between Turkey and Russia? Where are Lakes Janina and Scutari? What is the capital of the Turkish Empire? What is its history? Which is the second city of the empire, and by whom was it built? By whom was Philippopoli founded? For what manufactures is it noted? How is Salonica situated, and what is stated of it? For what is Serez celebrated? Mostar? Janina? Larissa? Pharsalia? Ismail?

Between what degrees of latitude and longitude is Turkey in Europe situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of

the climate and soil? Name some of the vegetable productions. What animals are found in the forests? What animals retain their ancient celebrity? What is the established religion? In what state are literature and science? What are the manners of the Turks? What is the government of Turkey in Europe? What is the government of the Danubian Principalities? What is the population of Turkey in Europe? of Turkey in Asia? of Turkey in Africa?

GREECE

Is bounded on the N. by Turkey; W. and S. by the Mediterranean; E. by the Archipelago.

DIVISIONS.—Hel'las or Northern Greece, More'a, the Islands.

GULFS.—Lepan'to, Co'ron, Koloky'thia, Nap'oli, Egi'na.

ISLANDS.—The principal are, Sky'ro, Ne'gropont, Sal'amis, Egi'na, Hy'dra, Spez'zia, Po'ros, An'dro, Ti'no, Ze'a, Sy'ra, Myco'ni, Pa'ros, Antipa'ros, Nax'ia, Mi'lo, Ni'o, Santori'ni, the Ionian Islands, namely, Corfu', Pax'o, San'ta Mau'ra, Ith'aca, Cephalo'nia, Zan'te, and Ceri'go. Almost every island has a town of its own name.

CAVES.—Mo'don, Matapan', Ma'lio or St An'gelo, Sky'lo, Colon'na.

MOUNTAINS.—Zago'ra or Hel'icon, Parnas'sus, Mai'na or Tay'getus.

RIVERS.—Aspropot'amo (*Achelo'us*); Rou'fia (*Alphe'us*); Basilipot'amo (*Euro'tas*).

PRINCIPAL TOWNS.—In HELLAS.—Ath'ens 41, the capital of Greece, containing the remains of some of the most interesting buildings of antiquity; the Pira'eus, 6, the port of Athens; Liva'dia 5; Thi'va or Thebes 9, on the site of ancient Thebes; Lepan'to, where, in 1571, the Spaniards defeated the Turks in a sea-fight; Salo'na 6, near which stood the ancient Del'phi; Missolon'ghi, where Lord Byron, the poet, died in 1824.

MOREA.—Tripolit'za 8; Cor'inth, one of the finest cities

of ancient Greece (now little more than a village); Patras' 20, with a large trade in currants; Navari'no, where the British, French, and Russian squadrons destroyed the Turkish and Egyptian fleets, 20th October 1827; Co'rou 5; Mo'don; Nap'oli di Malva'sia, whence the wine called Malmsey takes its name; Napoli di Roman'ia 5, with a good harbour, and strongly fortified; Ar'gos 8; Spar'ta, famous in the history of ancient Greece; Mis'tra or Mis'itra 7.

IONIAN ISLANDS.—Corfu 25, with a good harbour. Zante 20, the only town on the east coast of the island of the same name.

Greece is situated between 36° 23' and 39° 30' N. Lat., and between 21° and 24° E. Long. Its length from the northern boundary to Cape Matapan, is about 200 miles; its breadth, from the north-west of the Morea to the east coast of Hellas, 155 miles; its superficial extent, 20,148 square miles. The general appearance of the country is mountainous.

The climate is healthy and agreeable; the soil in the valleys is remarkably fertile, but capable of much agricultural improvement. Greece is not surpassed in picturesque beauty by any country in Europe; and interesting monuments of antiquity almost everywhere meet the eye.

Wheat, barley, maize, rye, oats, pease, beans, cotton, tobacco, olives, currants, almonds, oranges, lemons, peaches, citrons, apricots, etc., are among the vegetable productions. The wild animals are the bear, wolf, lynx, boar, fox, jackal, etc.; there are large flocks of sheep, which migrate at the approach of winter from the interior mountains to the low grounds near the sea, and return again to the hills in spring; the horses of the Morea, though not admired for their beauty, are active, vigorous, and sure-footed.

The established religion is that of the Greek or Eastern Church, so called in contradistinction to the Roman or Western Church, from which it separated in the ninth century. Education has been, till lately, almost entirely neglected. The modern Greeks are gay, lively, and acute; but they frequently display duplicity, and a want of integrity and honour.

The Ionian Islands were under the protection of Great Britain from 1815 till 1864, when they were ceded to Greece.

The government is a constitutional monarchy.

The population in 1865 was 1,348,412.

EXERCISES.—How is Greece bounded? What are its divisions? What two gulfs are south of the Morea? Where are the Ionian Islands? Where is Salamis? Name the three capes on the south of the Morea. Which of them is the most southerly? Where is the Gulf of Lepanto? Cape Colonna? Mount Parnassus? Taygetus? Where is the river Aspropotamo? What is the capital of Greece? What is stated of it? How is Missolonghi situated? Who died there, and when? How is Corinth situated? What is said of it? Where is Navarino? What occurred there, and when? To what does Napoli di Malvasia give name? How is Napoli di Romania situated? What is stated of it? What is the population of Athens? Napoli di Romania? Livadia?

Between what degrees of latitude and longitude is Greece situated? What are its length, breadth, and superficial extent? What is the general appearance of the country? What is the nature of the climate and soil? In what respect is Greece unsurpassed by any country in Europe? Mention some of its vegetable productions. What are the wild animals? What is said of the sheep? of the horses of the Morea? What is the established religion? In what state is education? What is the character of the modern Greeks? When were the Ionian Islands ceded to Greece? What is the government of Greece? What is its population?

THE AUSTRIAN EMPIRE

Is bounded on the N. by Russia, Prussia, and Saxony; W. by Bavaria, Switzerland, and Italy; S. by Italy, the Gulf of Venice and Turkey; E. by Turkey and Russia.

DIVISIONS.—Mora'via and Sile'sia; Bohe'mia; the Archduchy of Austria; Duchy of Salz'burg; Sty'r'ia; Carin'thia and Carnio'la; Go'ritz, Gradis'ca, Is'tria, and Trieste; Tyrol' and Voral'berg; Dalma'tia; Croa'tia; Slavo'nia; Hun'gary; Transylva'nia; Gal'icia and Lodome'ria, or Austrian Poland; Bukowi'na; Ser'via and the Banat of Temes; the Military Frontiers.

MOUNTAINS.—Carpa'thian, Sudet'ic, Tyrolese' Alps or Bren'ner Mountains.

RIVERS.—Elbe (with its tributary the Moldau'); Dan'ube (with its tributaries Inn, Drave, Save, March or Mora'va, Waag, Theiss, Maros'); Dnies'ter; Po; Min'cio; Ad'ige; Bren'ta; Pia've; Tagliamen'to.

LAKES.—Neu'siedler See, Plat'ten See, Cirk'nitz.

PRINCIPAL TOWNS.—In MORAVIA and SILESIA.—Brunn 59, with extensive woollen and other manufactures; Ol'mutz 15, a strongly-fortified city; Iglau' 17, noted for its cloths and paper; Aus'terlitz, famous for a decisive victory gained here by Napoleon Bonaparte over the Austrians and Russians in December 1805; Troppau' 10, noted for its manufactures of cloth and arms.

BOHEMIA.—Prague 143, famous as the birthplace of the great Reformers, John Huss and Jerome of Prague; Reich'enburg 13, with flourishing manufactures of linen, woollen and cotton; Kon'iggratz 9, a strongly-fortified city, near which was fought the famous battle of Sadowa in 1866; Pil'sen 10, with mines of alum and iron in its neighbourhood; Kut'tenburg 10, noted for its mines of lead, copper, and silver; E'ger 11; Carls'bad, with hot baths which rank among the most celebrated in Europe; Top'litz, also famous for its baths; Culm.

ARCHDUCHY OF AUSTRIA, AND DUCHY OF SALZBURG.—Vien'na 560, the capital of Austria: near it are the villages of As'pern, Ess'ling, and Wagram, where desperate battles were fought between the French and Austrians in 1809; Lintz 28, with cloth and other manufactories; Stey'er 10, with excellent hardware manufactures; Salzburg 17, with an immense citadel, situated on a lofty rock in the centre of the city; Neu'stadt 14, noted for a Cistercian Abbey, and a military school.

STYRIA.—Gratz 63, with a great inland trade; Cil'y, with a castle, in which are preserved many valuable

antiquities; Zell or Mari'azell, a great resort of Roman-catholic pilgrims, and noted for its forges; Bruck, famous for its manufacture of spinning machines.

CARINTHIA AND CARNIOLA, GORITZ, GRADISCA, ISTRIA, AND TRIESTE.—Laybach 21, with a considerable transit trade; Cla'genfurt 14, with manufactures of silk and cloth; Id'ria 5, noted for its rich mine of quicksilver; Trieste 66, a free port with a great trade; Fiu'me 14, a free port; Ca'po d'Is'tria 7, with large salt-works.

TYROL AND VORARBERG.—Innsbruck 14, the seat of a university; Bot'zen or Bolsa'no 10, noted for its fairs; Trent 13, famous for the Roman-catholic council which held its sittings there from 1545 till 1563, for the purpose of suppressing the Reformation; Brix'en, a strongly-fortified town; Rovere'do 8; Schwatz 5, noted for its silver and copper mines.

DALMATIA.—Za'ra 9, a strongly-fortified town, with a good harbour; Spala'tro 10, near the ancient Salona, and the ruins of the palace built by the Roman Emperor Diocletian; Ragu'sa 9, a strongly-fortified seaport.

CROATIA, SCLAVONIA, AND THE MILITARY FRONTIERS.—A'gram 17, a strong town with a fine cathedral; Carl'stadt 6, a fortified city; Es'sek 13, with considerable trade and strong fortifications; Sem'lin 13, a fortified town, the chief seat of the trade between Turkey and Austria; Peterwar'dein 7, a strong fortress, where Prince Eugene defeated the Turks in 1716.

HUNGARY.—Bu'da or O'fen 55, the capital of Hungary, noted for its baths, and for the red wines produced in its neighbourhood; Pesth 132, united to Buda by two bridges across the Danube, with a richly-endowed university; Pres'burg 44, once the capital of Hungary, and still the place where its kings are crowned; Komorn' or Comorn' 12, one of the strongest fortresses

in Europe; Kets'kemet 39, with a good trade; Tokay' 6, celebrated for its wines; Schem'nitz 20, noted for its mines of gold and silver, and for its mining school; Miskolz' 26, with a great trade in wine, corn, and leather; Debret'zin 36, the seat of a Calvinistic college.

SERVIA AND THE BANAT OF TEMES.—Tem'eswar 21, a strongly-fortified town; There'sienstadt 53, rather a cluster of villages than a town; Zom'bor 22, with an extensive trade in corn and cattle; Neu'satz 10, the centre of the trade between Turkey and south-eastern Germany.

TRANSYLVANIA.—Clau'senberg 21; Carls'burg 5, in the neighbourhood of rich gold-mines; Verespa'tak, with gold and silver mines, which were worked by the Romans and are still very productive; Maros'-Vasare'ly 10; Hermanstadt' 16; Cronstadt 27, a strong town with considerable trade and manufactures; Bisz'triz 6, with linen-manufactures, tanneries, and soap-works.

GALICIA AND LODOMERIA, or AUSTRIAN POLAND, AND BUKOWINA.—Lem'berg 70, the seat of a university, and a place of great trade in cloth and linen; Bro'dy, 18; Sam'bor 11, with manufactures of linen; Czer'nowitz 26, the capital of the duchy of Bukowina; Jar'oslaw 7, with an imperial cloth-manufactory; Wielicz'ka 5, near the largest salt-mines in the world; Cra'cow 41, the ancient capital of Poland, more recently the capital of the Republic of Cracow, but incorporated in 1846 with the Austrian Empire: it is the seat of a university, and has a cathedral where are the tombs of many of the Polish kings.

Austria is situated between 42° 10' and 51° N. Lat., and between 9° 35' and 26° 25' E. Long. Its greatest length is about 800 miles; its greatest breadth, 492 miles; its superficial extent,

236,000 square miles. The country is traversed by immense mountain-chains, between which there are extensive plains and valleys.

The climate in the northern part, which includes the whole of Bohemia, is rather colder in winter and warmer in summer than with us in England; in the central part it is temperate and salubrious; in the south the winter is only of three months' duration, the cold seldom exceeding what we endure in the month of March. The soil, with the exception of the more elevated parts, is good, but agriculture is in a backward state.

Besides the common kinds of grain, flax, hemp, maize, rice, tobacco, vines, olives, and myrtles are cultivated, and at least a third of the productive soil is covered with forests. The domestic animals are similar to those of Germany. In Hungary the horse, though small in size, is swift and active, and great attention is paid to the improvement of the breed; the cattle are large and well shaped; sheep are exceedingly numerous, but the wool is inferior to that of Saxony. Swine and poultry are fed in large numbers. The silk-worm is cultivated in the south. The minerals of greatest value are gold, silver, quick-silver, copper, lead, tin, iron, zinc, antimony, coal, salt, soda, natron, sulphur, graphite, etc.

The Roman-catholic faith is professed by the great body of the people. The Greek church ranks next in point of numbers. There are many Calvinists, Lutherans, and Jews, all sects being tolerated. Education is attended to with much care, and elementary schools are established throughout the whole empire. The manners of the Austrians are similar to those of the Germans,—they are cold and distant, though civil to strangers, and are reputed deficient in intellectual attainments. The Hungarians are a high-minded people, exceedingly tenacious of their nationality, and among the best soldiers in Europe.

The government was long absolute, but may now be regarded as a constitutional monarchy.

The population in 1867 was 34,706,460.

EXERCISES.—What are the boundaries of Austria? Point out its divisions. What are the three most northerly? What the most westerly? the most easterly? the most southerly? What division is west of Carinthia? Where are the Carpathian Mountains? the Brenner? the Sudetic? Where does the Elbe rise? Name the tributaries of the Danube. Where does the Dniester rise, and in what direction does it flow? Where is Lake Cirknitz? Neusiedler See, and Platten See? Point out the towns in Bohemia. Name those

in Moravia and Silesia. For what is Austerlitz famous? Iglau? Prague? Carlsbad? Kuttensburg? On what river is Vienna situated? What battles were fought in its neighbourhood? For what is Neustadt noted? Idria? Trent? Schwatz? Komorn? On what river is Insbruck situated? Trent? Prague? Koniggratz? How are Trieste and Fiume situated? Point out the towns in Hungary proper. On what river is Pesth situated? What is stated of it? For what is Schemnitz noted? Tokay? Vercospatak? Biaztritz? Jaroslaw? Wieliczka? What occurred at Peterwardein, and when? Of what was Cracow the ancient capital? When was it incorporated with the Austrian Empire? What is the population of Vienna? Prague? Trieste? Lemberg? Presburg? Gratz? Brunn?

Between what degrees of latitude and longitude is Austria situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate in the northern part? in the central part? in the south? What is the nature of the soil? Mention the vegetable productions. What is stated of the domestic animals? Mention some of the minerals. What is the prevailing religion? In what state is education? What are the manners of the Austrians? What is the character of the Hungarians? What is the government of Austria? What is its population?

GERMANY

Is bounded on the N. by the Baltic, Denmark, and the German Ocean; W. by Holland, Belgium, and France; S. by Switzerland and Austria (the Tyrol); E. by Austria and Prussia.

CHIEF DIVISIONS.—Kingdom of Sax'ony, Kingdom of Bava'ria, Kingdom of Wur'temberg, Grand Duchy of Ba'den, Hes'se-Darm'stadt, the Saxe Principalities (Saxe-Al'tenburg, Saxe-Coburg-Go'tha, Saxe-Mei'nningen), Saxe-Weimar, An'halt, Brun'swick, Ol'denburg, Meck'-lenburg, the Three Free Cities (Ham'burg, Bre'men, and Lu'beck).

MOUNTAINS.—The Hartz, Swartz'wald or Black Forest, Erzgebirge (Erz'berg) or Metallic Mountains, Riesenge'birge or Giants' Mountains.

RIVERS.—Elbe, We'ser, Ems, Rhine (with its tribu-

taries Neck'ar and Maine); Danube (with its tributaries Il'ler, I'ser, and Inn).

LAKES.—Mu'ritz, Plau, Schwe'rin, Diepholz', Constance or the Bo'den See, Chi'em See.

PRINCIPAL TOWNS.—In SAXONY.—Dres'den 146, the capital, famous for its royal library, picture-gallery, and manufactures: in its neighbourhood is Meis'sen 10, noted for its beautiful porcelain-manufactory; Leip'sic 85, celebrated for its university, for its three great annual fairs, and for the defeat of Napoleon Bonaparte by the Allies in 1813; Chem'nitz 55, with manufactures of silk, woollen, and cotton; Frey'berg 19, noted for its silver-mines, and mining academy; Baut'zen 12, where the Allies were defeated by Napoleon Bonaparte in 1813; Zittau' 14, the centre of the linen-manufactures of Saxony.

BAVARIA.—Mu'nich 167, the capital, with a university, and one of the finest galleries of paintings in Europe; Rat'isbon 30, long the capital of Bavaria, and from 1662 till 1806 the seat of the Imperial Diet; Augs'burg 49, where, in 1530, the Protestant Confession of Faith, drawn up by Luther and Melancthon, was presented to Charles V., Emperor of Germany; Nu'rem-berg or Nurn'berg 70, where watches were invented by Peter Hele; Passau' 13, a strongly fortified town; Spire 14, where, in 1529, the Reformers made that protest against the proceedings of Charles V., which obtained for them the name of *Protestants*; Deux Ponts 7; Blen'heim, famous for the victory gained by the Duke of Marlborough and Prince Eugene over the French and Bavarians in 1704; Hohenlin'den, where, in 1800, the Austrians were defeated by the French, under Moreau; An'spach 13; Bam'berg 25; Wurtz'burg 41, the seat of one of the oldest universities in Germany.

WURTEMBERG.—Stutt'gard, 69, the capital, with a royal library containing a collection of 12,000 Bibles; Heil'bronn 16, on the Neckar, shares actively in the transit trade between Frankfort and South Germany; Reut'lingen 13, on the Eschatz, and on the railway to Plochl'ingen, was the first town in Swabia which embraced the principles of the Reformation; Tu'bingen 8, the seat of a celebrated university, which has an average attendance of 1000 students; Ulm 23, a strong town, famous for the capture of General Mack and his army by Napoleon I. in 1805.

BADEN.—Carlsru'he 30, the capital; Baden-Baden 6, celebrated for its mineral waters; Man'heim 30, a free port with a considerable trade; Hei'delberg 18, noted for its university, which has forty-five professors, seventy-eight teachers, and a library of 120,000 volumes; Frey'burg 19, with a noble cathedral, and a Roman-catholic university; Constance 6, famous for the Council held here between 1414 and 1418, which sentenced John Huss and Jerome of Prague to be burned, and condemned the doctrines of John Wickliffe.

HESSE-DARMSTADT.—Darm'stadt 29, the capital; Mentz or Mayence' 41, a strongly fortified city, which disputes with Haar'lem and Strasburg the invention of printing; Worms 11, one of the most ancient cities of Germany: at the diet held here in 1521 Luther was excommunicated; Gies'sen 9, the seat of a university.

THE SAXE PRINCIPALITIES (SAXE-AL'TENBURG, SAXE COBURG-GO'THA, SAXE-MEI'NINGEN, SAXE-WEIMAR).—Altenburg 18; Gotha 18, a handsome city, with a museum, picture-gallery, valuable library, and cabinet of coins; Coburg 11, with an ancient palace and castle; Meiningen 7; Hild'burghausen; Weimar 14, noted as

a seat of literature and art; Je'na 7, celebrated for its university, and for the defeat of the Prussians by Napoleon I. in 1806.

ANHALT.—Des'sau 16; Bern'burg 12; Zerbst 11.

BRUNSWICK.—Brunswick 45, the capital, noted for its fairs: the invention of the spinning-wheel in 1530 is ascribed to a sculptor of this town, named Jurgén; Wolfenbuttel 9, with a library containing some of Luther's manuscripts.

OLDENBURG.—Oldenburg 8, the capital, with a castle and a collection of German antiquities; Del'menhorst, noted for a great horse and cattle fair.

MECKLENBURG.—Schwe'rin 23, the capital; Wis'mar 13, with a good harbour, and shipbuilding yards; Ros'tock 26, the seat of a university; New-Stre'litz 7, built in the form of a star; Gus'trow 11.

THE THREE FREE CITIES.—Ham'burg 176, the greatest commercial city in Germany, if not in the Continent; Bre'men 71, the ancient capital of the Hanseatic League, with several manufactures, and an extensive commerce; Lu'beck 32, with a considerable trade, the birthplace of Sir Godfrey Kneller the portrait-painter, and of Mosheim the ecclesiastical historian.*.

Germany, exclusive of the German states of Austria, Prussia, and the Netherlands, is situated between 47° 20' and 54° 12' N. Lat., and between 7° and 15° E. Long. Its superficial extent is about 70,666 square miles. The face of the country is exceedingly varied: the south, south-eastern, and central provinces

* These three cities are called Hanse Towns, a name given to certain seaport towns of Germany which entered into a mutual league (*hansa*) against the pirates of the Baltic and the feudal chiefs of the neighbouring mainland. The Hanseatic League was formed between Hamburg and Lubeck in 1241. It gradually extended until it embraced sixty-six cities, but began to decline, as commerce found new outlets, towards the end of the 15th century, and was dissolved in 1630.

are mountainous and rugged; the remaining part is a wide sandy plain, almost on a level with the sea. The climate, upon the whole healthy, is much modified by the elevations of the land. In the north and north-east, it is humid and changeable, much rain falls, and desolating hurricanes are frequent: in the centre and the south it is more steady and genial. The soil, especially in the plains and along the borders of the rivers, is very productive, but in the south it is considerably lighter than in the north.

Germany has long been celebrated for its forests, which contain an inexhaustible supply of useful timber. Grain of every kind, as well as the potato, is extensively cultivated; fruit-trees and kitchen-herbs are found here in high excellence; hops, tobacco, madder, and flax are produced; and the vine in the southern provinces arrives at perfection, the German wines, particularly that called *Hock*, being reckoned among the best in Europe. The horses in the north-east are admirably adapted for draught or heavy cavalry, but in other parts the breed is inferior; great numbers of cattle, and immense flocks of sheep are reared,—the wool of Saxony and Silesia being esteemed equal to that of Spain; goats and swine are fed in large numbers, and domestic fowls are plentiful. Among the wild animals inhabiting the forests, are deer, boars, lynxes, bears, and wolves. Minerals are abundantly distributed, the most important being gold, silver, cinnabar, iron, copper, tin, lead, calamine, bismuth, cobalt, nickel, titanium, arsenic, rock and Glauber salts. Precious stones are frequently met with.

About one-half of the population are Roman-catholics, one-fifth belong to the Evangelical church—which is a union of Calvinists and Lutherans—and the remainder are either Christians of various sects or Jews,—the whole enjoying the most perfect toleration. In no country in the world has education been more generally diffused. Elementary schools are established everywhere, and education is so cheap as to be within the reach of every one. In all the larger towns there are schools for classical education, and nineteen well-endowed universities offer instruction in the higher departments of learning.

The Germans are hospitable, frank, faithful, and sincere, industrious, and extremely persevering, but formal, and many of

them possessed of an extravagant pride of family. In religion and philosophy, they too often allow an excessive enthusiasm to mislead them.

Since 1866, the states north of the Lower Maine have been formed into a confederation, with Prussia for its acknowledged military and diplomatic head.

The following are the states (with the exception of Prussia) into which Germany is now divided:—*North German Confederation*.—Saxony, Hesse-Darmstadt (N. of the Maine), Brunswick, Mecklenburg-Schwerin, Mecklenburg-Strelitz, Saxe-Weimar, Saxe-Coburg-Gotha, Saxe-Meiningen, Saxe-Altenburg, Oldenburg, Anhalt, Schwarzburg-Sonderhausen, Schwarzburg-Rudolstadt, Waldeck, Reuss (Older and Younger), Schaumburg-Lippe, Lippe-Detmold, the Free Cities of Hamburg, Lubeck, and Bremen. *South German States*.—Wurtemberg, Baden, Bavaria, Hesse-Darmstadt (S. of the Maine), Liechtenstein.

The population is about 12,455,542.

EXERCISES.—How is Germany bounded? Point out its divisions. What division is to the east of Wurtemberg? What to the west? Which is the most northerly division? Where are the Hartz Mountains? the Erzgebirge? the Swartzwald? Where does the Danube rise? In what direction does the Maine flow? Into what river does it fall? Through what division does the Lser flow? Where is the Lake of Constance? Muritz? Chiem See? On what river is Dresden situated? What is stated of it? What occurred at Bautzen, and when? For what is Leipsic celebrated? Clausthal? Freyberg? On what river is Munich situated? What is said of it? What took place at Spire, and when? For what is Blenheim famous? Ulm? Constance? Baden? What is stated of Augsburg? For what is Jena celebrated? Weimar? What is stated of Mentz? Brunswick? Name the free cities or Hanse Towns. What is stated of Lubeck? Which is the most commercial city in Germany? What is the population of Munich? Dresden? Leipsic? Hamburg?

Between what degrees of latitude and longitude is Germany situated? What is its superficial extent? What is the general aspect of the country? What is the nature of the climate? of the soil? For what has Germany been long celebrated? Mention some of the vegetable productions. What are the domestic animals? Name the wild animals. Enumerate some of the mineral productions. What is stated of the religion of Germany? In what state is education? How many universities are there? What is the character of the people? When was the North German Confederation formed? Name the South German states. What is the population of Germany?

ASIA.

FOR THE GENERAL DIVISIONS OF ASIA, see page 11.

TURKEY IN ASIA

Is bounded on the N. by Russia, the Black Sea, the Straits of Constantinople, the Sea of Marmora, and the Dardanelles; W. by the Archipelago and the Mediterranean; S. by the Mediterranean and Arabia; E. by Persia and Russia.

DIVISIONS.—Asia Minor (including Anato'lia, Carma'nia, and Sivas' or Roum); Arme'nia; Kurdistan' (*Assyr'ia*); Irak-Ar'abi (*Chalde'a*); Algesi'ra (*Mesopotamia*); Syr'ia; Pal'estine or the Holy Land.

ISLANDS.—Ten'edos, the wine of which is highly esteemed; Les'bos or Mytele'ne, the birthplace of Sappho; Sci'o, famous among the ancients for its wine; Sa'mos, the birthplace of Pythag'oras; Pat'mos, where St John wrote the Book of Revelation; Stan'co or Cos, the birthplace of Hippoc'rates, Simon'ides, and Apel'les; Rhodes, in which was the famous colossal statue of Apollo; Scarpan'to; Cy'prus, in which is Nico'sia; Astropala'ia.

MOUNTAINS.—I'da, Olym'pus, Tau'rus, Leb'anon (anciently famous for its cedars), Ar'arat (on which it is supposed that Noah's Ark rested after the flood), Olym'pus (in the island of Cyprus).

RIVERS.—Mein'der (*Mean'der*), celebrated for its windings, Sar'abat, Kis'il-Irmak (the red river), Saka'ria, Je'kil-Ir'mak (the green river), Euphra'tes, Ti'gris, Oron'tes, Jor'dan.

LAKES.—Van, Salt Lake, Asphalti'tes or the Dead Sea, Lake of Tibe'rias or Sea of Gal'ilee.

PRINCIPAL TOWNS.—In ANATOLIA.—Smyr'na 150, a place of great trade, and the emporium of the Levant; Manis'sa 25 (*Magne'sia*), famous for its plantations of saffron; Bru'sa or Pru'sa 60, noted for its mineral waters and its silk; Kutay'ah 50, the capital of Anatolia, with a good trade; Ca'ra-his'sar 60, famous for the immense quantity of opium collected in its neighbourhood, and for its woollen manufactures; Ango'ra 15, celebrated for the fineness of its goats' hair; Kostamu'ni 12, with a trade in wool.

CARAMANIA.—Ko'nieh 50 (*Ico'nium*), with considerable trade and manufactures; Kaisa'rieh 25, celebrated for the production of a yellow berry used in dyeing; Tar'sus 30, the birthplace of St Paul, and once the rival of Athens for learning; Ada'na 20, noted for its fruits.

ROUM.—Tokat' 30; Ama'sia 25, the birthplace of Stra'bo the geographer, and of Mithrida'tes; Sivas 27, noted for its fine grain.

ARMENIA.—Er'zeroum 44, the centre of a great trade; Treb'isond 45 (*Trape'sus*), with a good trade; Kars 12, famous for its siege in 1855.

KURDISTAN.—Van 15, a strong commercial city; Bed'lis or Bet'lis 10; Erbil (*Arbe'la*) 6, near which Alexander the Great gained a decisive victory over Dari'us.

IRAQ-ARABI.—Bag'dad 65, famous as the scene of so many oriental tales; Basso'ra 60, a place of great trade, the seat of a British factory; Hil'lah 10, in the vicinity of which are immense mounds of ruins, marking the site of ancient Bab'ylon.

ALGESIRA.—Diarbe'kir 14; Mo'sul 40, from which it has been supposed that the manufacture called muslin takes its name: opposite to it, on the east side of the Tigris, are the ruins of ancient Nin'evéh; Or'fa 30, sup-

posed to be the Ur of the Chaldees' mentioned in Scripture.

SYRIA.—Aleppo 100, with a large inland trade; Antioch or Antakia 18, once the capital of Syria, the place where the followers of our Saviour were first called Christians; Damascus 150, a city of great antiquity, with extensive commerce: the manufacture called damask takes its name from this city; Beyrout 60, the port of Damascus; Tripoli 20, a seaport with considerable trade; Hamah 30, the Hamath of Scripture; Ain'tab 20.

PALESTINE OR THE HOLY LAND.—Jerusalem 16, so celebrated in the Holy Scriptures; Acre 5 (*Ptolemais*), the principal cotton mart of Syria, famous in the time of the Crusades: it made a successful defence against Napoleon Bonaparte in 1799, but was nearly reduced to ruins by a three hours' bombardment from the British fleet in 1840; Nab'lous 8, on the site of the ancient Shechem, in the vicinity of Jacob's well and the tomb of Joseph; Tabari'a (*Tiberias*), nearly destroyed by an earthquake in January 1837; Jaffa (*Joppa*) 25, the port of Jerusalem; Gaza 15.

Turkey in Asia is situated between 30° and 42° N. Lat., and between 26° and 49° E. Long. Its length from E. to W. is about 1200 miles; its breadth from N. to S., about 850 miles; its superficial extent, about 600,000 square miles. The aspect of the country is exceedingly varied; many of the provinces are traversed by chains of lofty mountains, between which are extensive and beautiful plains of great fertility, while the countries watered by the Euphrates and Tigris are vast continued plains of alluvial soil of inexhaustible richness.

The climate is healthy,—the colder air of the mountain-districts tempering that of the plains, which would otherwise be excessively hot. The soil is naturally very productive, but agriculture is in a wretched state.

The mountains are everywhere clothed with wood; and the southern shores of the Black Sea present a continued succession

of forests. Corn, silk, cotton, tobacco, opium, wine, and fruits of all kinds are produced in abundance. The chief domestic animals are sheep, of a breed which is held in great estimation, and the goats of Angora, famous for their fine hair, of which the best camlets are made. Among the wild animals may be noticed the lion, which never appears to the west of the Euphrates, the hyena, the jackal, the antelope, and the ibex or rock-goat. The copper-mines near Tokat are productive; but little else is known regarding the minerals.

The prevailing religion is Mohammedanism; but there are many Greek, Nestorian, and Armenian Christians and Jews. There are numerous elementary schools, and to all the mosques are attached colleges for students of law and of religion. In a country inhabited by so many distinct tribes, a great diversity of character and manners must necessarily prevail. The Osmanlis are ignorant, simple-minded, devout, honest, and well-disposed; the Kurds are fierce and turbulent; the Turcomans, though a nomadic tribe, have made some advances towards civilisation.

The government is an absolute despotism, vested in the Sultan or Grand Signior, who usually delegates his authority to the Grand Vizier. The affairs of the different provinces are administered by Pashas, who are invested with nearly absolute authority within their provinces.

The population in 1844 was estimated at 16,050,000.

EXERCISES.—What are the boundaries of Turkey in Asia? Name its divisions. Which is south of Kurdistan? What was its ancient name? Which is the most westerly division? Where is Palestine? What was the ancient name of Algesira? Of whom was Stanco or Cos the birthplace? What is stated of Patmos? For what was Scio famous among the ancients? Where are the two mountains named Olympus? Taurus? Ida? Ararat? What is supposed of this mountain? Where is Lebanon? For what was it anciently famous? In what direction do the Euphrates and Tigris flow? For what is the Meinder celebrated? Into what does the Jordan flow? Where is Lake Van? Salt Lake? the Dead Sea? For what is Manissa famous? Angora? Brusa? Kaisarieh? Adana? Cara-hissar? What is stated of Smyrna? Tarsus? Amasia? What took place near Erbil? On what river is Bagdad, and for what is it famous? What is stated of Hillah? Mosul? Orfa? Aleppo? Damascus? Jerusalem? Acre? Jaffa? Nablous? Where were the followers of our Saviour first called Christians? What is the population of Smyrna? Bagdad? Aleppo? Damascus? Jerusalem? Brusa?

Between what degrees of latitude and longitude is Turkey in Asia situated? What are its length, breadth, and superficial extent? What is the *aspect* of the country? By what are many of the prov-

inces traversed? Of what do the countries watered by the Euphrates and Tigris consist? What is the nature of the climate and soil? Mention the vegetable productions. What are the chief domestic animals? What are the wild animals? What is stated of the mineral productions? What is the prevailing religion? What other creeds are there? In what state is education? What is the character of the Osmanlis? of the Kurds? of the Turcomans? What is the government? What is the population?

A R A B I A

Is bounded on the N. by Turkey in Asia; W. by the Isthmus of Suez and the Red Sea; S. by the Indian Ocean; E. by the Persian Gulf and Turkey.

DIVISIONS.—Hed'jaz, Ye'men, Had'ramaut, O'man, Lah'sa, Ned'jed.

GULFS.—Suez, Akaba', Oman or Or'mus.

ISLAND.—Bahrein', in the Persian Gulf, with one of the most valuable pearl-fisheries in the world: Manama 40, its chief town, has a large trade.

CAPIES.—Bab-el-mandeb, Ras-el-had, Mussendom'.

MOUNTAINS.—Si'nai (on which the Lord delivered the Ten Commandments to Moses), Ho'reb (on which Moses saw the burning bush), Sham'mar, Ar'afat.

PRINCIPAL TOWNS.—In HEDJAZ.—Mec'ca 30, the capital of Arabia, and the birthplace of Mohammed in 569; Medi'na 15, the residence of Mohammed after his flight from Mecca, and his burialplace; Jid'da 22, the port of Mecca, a place of considerable commerce; Yam'bo 5, the port of Medina.

YEMEN.—Sa'na 40, with a great trade, chiefly in coffee; Mo'cha 7, long noted for its excellent coffee; A'den 20, a strongly-fortified seaport, belonging to *Britain*.

HADRAMAUT.—Si'hun; Da'an; Da'far; Maka'lah 5, the chief place for trade on the south coast.

OMAN.—Mus'cat 50, a strongly-fortified seaport, with a very extensive trade; Ros'tak; So'har 9.

LAHSA.—Lah'sa; El-Ka'tif 6; Grain or Koueit 10; Ras-al-Khy'ma, formerly a great resort of pirates.

NEDJED.—Derey'eh 15, the chief seat of the sect of the Wahabees.

Arabia is situated between 12° 40' and 35° N. Lat., and between 32° 37' and 60° E. Long. Its length, from the Straits of Bab-el-mandeb to the Euphrates, is 1500 miles; its breadth, from the Red Sea to the most easterly point, 1280 miles; its superficial extent, about 1,000,000 square miles. The distinguishing features of Arabia are its immense deserts of sand, diversified only by a few spots of great beauty and fertility, called *oases* or islands.

The heat in the low flat parts is intense; in the more elevated parts the climate is milder. A great proportion of the country is absolutely barren; but the district of Yemen and some others produce excellent crops.

Wheat, Turkey-corn, durra, barley, and beans are the common grains. Manna is found abundantly in the deserts; figs, dates, pomegranates, cotton, tamarinds, oranges, coffee, sugar-cane, betel, nutmeg, senna, and all sorts of melons and pumpkins are produced in perfection, together with the amyris opobalsamum, which yields the celebrated balm of Mecca. Arabia has long been famous for its horses and camels; but the chief wealth of the pastoral Arabs consists in sheep and goats. Among the wild animals are the panther, hyena, jackal, wolf, fox, antelope, and ass. The only minerals yet found are, lead in Oman, containing a small quantity of silver, iron in the north of Yemen, and rock-salt in several places.

The religion is Mohammedanism. The Arabs are famed for their hospitality to strangers, and their generosity and fidelity have been much praised; but their fidelity seems to be regulated only by their interests. They are addicted to war, bloodshed, and cruelty, and never forget or forgive an injury.

Among the Bedouins, or wandering tribes of the interior, the patriarchal form of government is general; while some of the

cities are ruled by Imams, or Emirs, nominally subject to the Ottoman Porte.

The population is estimated at 8,000,000.

EXERCISES.—How is Arabia bounded? Name and point out its divisions. Where is the Gulf of Suez? of Ormus? What is stated of the island of Bahrain? Where is Cape Ras-el-had? Where are Sinai and Horeb? Of what memorable events were they the scenes? What is the capital of Arabia? Who was born there, and when? What is stated of Medina? For what is Mocha noted? To what country does Aden belong? What is said of Muscat? What is the population of Mecca? Medina? Sana? Muscat? Dereyeh?

Between what degrees of latitude and longitude is Arabia situated? What are its length, breadth, and superficial extent? What are the distinguishing features of Arabia? What is the nature of the climate and soil? Mention some of the vegetable productions. For what animals has Arabia long been famous? What are the wild animals? Enumerate the minerals. What is the religion of Arabia? For what are the Arabs famed? To what are they addicted? What is the government of Arabia? What is its population?

P E R S I A

Is bounded on the N. by Tartary, the Caspian Sea, and Russia; W. by Turkey in Asia; S. by the Persian Gulf; E. by Affghanistan and Beloochistan.

DIVISIONS.—Mazanderan', Ghi'lan, Azerbi'jan, I'rak-Aje'mi, Luristan', Khuzistan', Farsistan', Laristan', Ker'man, Western part of Khoras'an, Astrabad'.

ISLANDS.—Ka'rak, Kish'ma, Or'mus, all in the Persian Gulf.

MOUNTAINS.—El'burz, Elwund'.

RIVERS.—A'ras or Arax'es, Kiz'zel-O'zen, Hawe'za or Kar'asu.

LAKES.—Uru'meah or Ur'mia, Bak'tegan.

PRINCIPAL TOWNS.—In MAZANDERAN.—Saree' 35, Amol 35, Balfroosh' 20, with an extensive trade.

GILAN.—Resht 50, with a good trade; Enzellee, the port of Resht.

AZERBAIJAN.—Tabriz' or Tau'ris (*i.e.* fever-dispelling) 100, the favourite residence of Haroun al Raschid; Uru'meah 25, said to be the birthplace of the famous Zoroas'ter.

IRAK-AJEMI.—Teheran' 80, the capital of Persia; Ispahan' 60, the ancient capital, now much decayed, but still a great place with a large trade; Cas'bin 40, a fortified town, with a considerable trade; Hamadan' 50, supposed to occupy the site of the ancient Ecba'tana, with a building said to be the sepulchre of Es'ther and Mor'decai; Ker'manshah 30.

LURISTAN.—Khorramabad' 5.

KHUZISTAN.—Shus'ter 8; Dez'phool 15.

FARSISTAN.—Shiraz' 30, noted as the birthplace of Sadi the philosopher, and of Hafiz the poet, the Anacreon of Persia: 35 miles to the north-east are the ruins of the celebrated Persep'olis, and 49 miles farther in the same direction are the ruins of Pasargadæ, with a building supposed to be the tomb of Cyrus the Great; Bushire' 18, the principal seaport of Persia, and the emporium of the trade with India: it was bombarded and taken by the British in 1856.

LARISTAN.—Lar 12, with the finest bazaar in Persia.

KERMAN.—Kerman 30, noted for the excellence of its wool, and its manufactures of shawls, etc.; Gombroon' 5.

WESTERN PART OF KHORASAN.—Mush'ed 100, a fortified city, with the tomb of Imam Reza, a resort of pilgrims; Yezd 50, celebrated for its commerce and silk-manufactures; Toor'but, with a considerable transit-trade.

ASTRABAD.—Astrabad' 5; Ashruff, the favourite residence of Shah Abbas the Great.

Persia is situated between 26° and 39 N. Lat., and between 44° and 62° E. Long. Its length from N.W. to S.E. is about 1200 miles; its breadth from S.W. to N.E., about 870 miles; its superficial extent, about 450,000 square miles. The country, on the north and west, is mountainous; on the east and south, it is an elevated dry salt-plain or tableland, with a scanty vegetation.

The heat in summer, especially in the low grounds near the Persian Gulf and the Caspian Sea, is scarcely supportable; and the climate here is very unwholesome. In the mountainous parts there are great storms of rain and snow, and the winters are exceedingly cold. The soil in the south is barren, but in the valleys of the north it is remarkably fertile and productive.

Wheat, barley, millet, and especially rice, are usual crops. Persia is believed to be the native country of the almond, peach, fig, pomegranate, apricot, and mulberry. The vine is common in the north; the sugar-cane, cotton, silk, opium, tobacco, saffron, etc., are also general articles of culture. The most remarkable plant, perhaps, is that from which assafœtida is obtained. The domestic animals are horses, famous for the elegance of their form, and sheep, remarkable for their long fat tails, some of which weigh thirty lbs. The lion, the panther, the leopard, the tiger, the boar, the ass, and the bear are among the wild animals. Copper, iron, silver, nitre, sulphur, naphtha, and bitumen are found in different provinces; and in the valley of Lake Urumeah there is a spring whose petrifying quality produces the beautifully-variegated Tabriz marble. Turquoises are found in Khorasan.

The established religion is Mohammedanism; but there are still a few followers of Zoroaster, or worshippers of fire. The Persians are noted for their vivacity, gaiety, bravery, hospitality, and humanity; but they are treacherous and insincere. The government is a military despotism; and here, as in almost all oriental states, justice is too often sold to the highest bidder.

The population is estimated at more than 10,000,000.

EXERCISES.—How is Persia bounded? Name its divisions. What are the islands in the Persian Gulf? Into what does the Aras or Araxes flow? Where is Lake Urumeah? What is the capital of Persia? What was the ancient capital? What is stated of Hamadan? What is said of Urumeah? For what is Kerman noted? What is the principal seaport of Persia? For what is Yezd celebrated? What is stated of Shiraz? What is the population of Teheran? Casbin? Isfahan?

Between what degrees of latitude and longitude is Persia situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate? What of the soil? Mention some of the vegetable productions. Of what fruits is Persia believed to be the native country? What are the domestic animals? Name the wild ones. What are the minerals? What is the established religion? What is the character of the people? What is the government of Persia? What is its population?

AFFGHANISTAN

Is bounded on the N. by Western Turkestan; W. by Persia; S. by Beloochistan; E. by Hindostan.

DIVISIONS.—Cabul', Herat', Candahar'.

MOUNTAINS.—Hindoo' Coosh, Sol'yman range.

RIVERS.—Cabul, Hel'mund or Heer'mund.

LAKE.—Hamoon' or Seistan.

PRINCIPAL TOWNS.—Cabul 60, the capital, a fortified town, surrounded with gardens producing the choicest fruits; Candahar' 50, supposed to be one of the Alexandrias founded by Alexander the Great, the centre of an extensive trade between India and Persia; Jellalabad', famous for the siege which it sustained when held by a British force under Sir Robert Sale in 1841-42; Pesha'wer 53; Herat 20.

Affghanistan is situated between 26° 50' and 36° 30' N. Lat., and between 60° and 72° 30' E. Long. Its superficial extent is estimated at 258,500 square miles.

The country is mountainous; possesses every variety of climate and soil, and is occupied by various tribes, of whom the Affghans, properly so called, are a brave and warlike race. The vegetable productions of the low lands are like those of Hindostan; while in the uplands, the timber, trees, herbs, etc., of Europe grow wild. Valuable minerals abound in the mountains around Cabul, and gold is gathered from the sand of the rivers which flow from the Hindoo Coosh.

The prevailing religion is Mohammedan. The government is an absolute monarchy; but some of the chiefs yield the

sovereign little more than a nominal allegiance, and the country is consequently in a very unsettled state.

The population is estimated at 4,000,000.

EXERCISES.—What are the boundaries of Afghanistan? Name its divisions. Where are the Solyman Mountains? the Hindoo Coosh? What is the capital of Afghanistan? What is stated of it? What is supposed of Candahar? What is the population of Cabul? Candahar? Peshawer? Herat?

Between what degrees of latitude and longitude is Afghanistan situated? What is its superficial extent? What is the general aspect of the country? What is the character of the Affghans? Where is gold found? What is the prevailing religion? What is the government? What is the population?

BELOOCHISTAN

Is bounded on the N. by Afghanistan; W. by Persia; S. by the Arabian Sea; E. by Hindostan.

DIVISIONS.—Kelat', Sarawan', Cutch-Gunda'va, Jhalawan', Lus, Mek'ran.

MOUNTAINS.—The Ha'la range.

PRINCIPAL TOWNS.—Kelat 12, the capital, strongly fortified; Gundava.

Beloochistan is situated between 24° 50' and 30° 20' N. Lat., and between 57° 40' and 69° 18' E. Long. Extent estimated at 166,000 square miles.

This country formed the south-east part of the ancient dominion of Persia. It is rugged and mountainous in character, and is divided between the Beloochees in the west, and the Brahoes in the east. The natural productions are similar to those of Afghanistan.

Mohammedanism is the professed religion of both Beloochees and Brahoes. The nominal sovereign is the Khan of Kelat; but the only real government is that exercised by the chiefs of the several tribes. Population estimated at 2,000,000.

EXERCISES.—What are the boundaries of Beloochistan? Name its divisions. Name the principal mountain range. What is the capital?

Between what degrees of latitude and longitude is Beloochistan situated? Of what ancient dominion did it form a part? What is the character of the country? Name the races between whom it is divided. What religion do they profess? What is the population?

HINDOSTAN,

OR

INDIA WITHIN THE GANGES,

Is bounded on the N. by the Himmaleh Mountains; W. by Affghanistan, Beloochistan, and the Arabian Sea; S. by the Indian Ocean; E. by the Bay of Bengal and the Eastern Peninsula.

CHIEF DIVISIONS.—Bengal', Bahar', Oude, Nepaul', Bootan', Del'hi, Kumaon', Cashmere', Lahore' or the Punjab', Moul'tan, Ajmere', Sin'dè, Gu'zerat, Mal'wa, Candeish', Aurungabad' or Dowlatabad', Bejapore' or Visiapore', Concan', Cana'ra, Mysore', Malabar', Co'chin, Travancore', the Carnat'ic, Golcon'da or Hydrabad', the Cir'cars, Oris'sa, Be'rar, Allahabad', A'gra.

GULFS.—Cutch, Cam'bay, Manaar, Bay of Bengal.

ISLANDS.—Ceylon' (containing the towns of Colom'bo, Kan'dy, and Trin'comalee'), Mal'dives, Lac'cadives; An'daman, Nicobar'.

STRAIT.—Palk's Passage.

CAPIES.—Jugget Point, Diu Head, Com'orin Point, Calimere Point, Palmy'ras Point.

MOUNTAINS.—Himmaleh, Himalaya, or Snowy Mountains (the highest of which, Mount Ev'erst, 29,002 feet above the level of the sea, is the loftiest mountain in the world); Vindhya; Western Gauts; Nilgher'ries; Eastern Gauts; Adam's Peak, in Ceylon.

RIVERS.—Indus (with its tributaries Je'lum, *Hydas'-pes*, Che'nab, *Acesi'nes*, Ravee', *Hydrao'tes*, Sut'lej, *Hesudrus*, Ghara, *Hyph'asis*); Nerbud'da; Taptee';

Ca'very; Pennar; Kist'na or Krish'na; Godav'ery (with its tributary the Bain Gun'ga); Mahanud'dy; Gan'ges (with its tributaries Jum'na, Sone, Goomtee, Gog'ra or Sarjou, Gunduck, Cosah or Coosy, Attri); Brahmapoo'tra. The Ganges falls into the Bay of Bengal by a great number of mouths, the chief of which is called the Hoog'ly River.

PRINCIPAL TOWNS.—In BENGAL.—Calcut'ta 600, the capital of British India, with a most extensive commerce; Moorshedabad' 147, once the capital of the province; Dac'ca 67, noted for its muslin-manufactures.

BAHAR.—Pat'na 284, in the neighbourhood of rich mines of saltpetre.

OUDE.—Luck'now 300, noted for its heroic defence by the British against the Sepoy mutineers in 1857; Fyzabad', the former capital.

NEPAUL.—Catmandoo' 50; Lalita-Patan 24.

BOOTAN.—Tassisu'don.

DELHI.—Delhi 150, formerly the capital of the Mogul empire: it was seized by the rebels in 1857, but was stormed and retaken by the British in the same year.

KUMAON.—Almo'ra.

CASHMERE.—Cashmere or Serinagur' 40, celebrated for its manufacture of shawls from the wool of the goats of Tibet.

LAHORE, OR THE PUNJAB.—Lahore 100; Amrit'sir 90, the holy city of the Sikhs.

MOULTAN.—Moultan 80, noted for its silks and carpets.

AJMER.—Ajmere 25, a handsome city with a strong fortress.

SINDE.—Hyderabad 25, with a strong fortress; Tat'ta, the ancient *Patala*, 20, celebrated for its fabrics of silk, cotton, and gold.

GUZERAT.—Ahmedabad' 130; Surat' 200, where the first commercial settlement of the English was made in 1612; Cam'bay 10.

MALWA.—Ougein' 150, considered by the Hindoos as their first meridian; Indore' 15, the capital of Holkar's Dominions.

CANDEISH.—Burhampore' 40, with a considerable trade.

AURUNGABAD or DOWLATABAD.—Aurangabad 60, so named from the Emperor Aurungzebe, who died here in 1707; Poo'nah 280, the capital of the Mahratta Empire, which was incorporated with British India in 1818.

BEJAPORE or VISIAPORE.—Bejapore or Visiapore, said to have once contained 984,000 inhabited houses, and 1600 mosques, but now little more than a mass of ruins.

CONCAN.—Bombay' 600, on a small island of the same name, the great emporium of Western India; Go'a 20.

CANARA.—Mangalore' 20, a flourishing seaport.

MYSORE.—Serin'gapatam 13, the capital of Mysore under Hyder Ali and Tippoo Saib, a strong town, on an island formed by the Cavery: it was stormed by the British forces, May 4, 1799; Bangalore' 60, with an extensive trade; Mysore 55, the residence of the Rajah.

MALABAR.—Calicut 25, the first Indian port visited by Vasco de Gama in 1498: the cotton-manufacture called calico takes its name from this town; Cananore' 10, a strong fortress.

COCHIN.—Cochin 30, where the first Portuguese fort was erected in 1503.

TRAVANCORE.—Trivan'drum, the residence of the Rajah.

THE CARNATIC.—Madras' 450, the capital of the presidency of the same name, with an extensive trade; Ar'cot 53; Trichino'poly 30, strongly fortified; Tanjore' 40, with one of the finest pagodas or temples in India; Tranquebar' 25, a fortified seaport.

GOLCONDA OR HYDRABAD.—Hydrabad 200, the capital of the Nizam's Dominions.

THE CIRCARS.—Masu'lipatam' 30, a seaport, noted for its manufacture of fine chintz; Visagapatam'; Corin'ga.

ORISSA.—Cut'tack 40; Juggernaut' 30, properly Jhagatna'tha, "Lord of the Universe," with a famous Hindoo temple and idol.

BERAR.—Nagpore' 111, with considerable manufactures.

ALLAHABAD.—Allahabad 65, the resort of vast multitudes of pilgrims who come here to bathe in the sacred waters of the Ganges; Bena'res 200, the chief seat of learning of the Brahmins.

AGRA.—Agra 77, the capital of the Mogul Empire until 1647; Gwal'ior 30, the capital of Scindia's Dominions, with a noted fortress; Bhurtpore' 100, with a once strong fortress, stormed by the British in 1805, 1826, and 1833.

THE BRITISH POSSESSIONS IN HINDOSTAN are divided into three presidencies—namely, Bengal, with an area (in 1865) of 672,648 square miles, and a population of 107,132,741; Madras, with an area of 141,746 miles, and a population of 24,926,509; and Bombay, with an area of 142,042, and a population of 12,889,106; in all, an area of 956,436 miles, and a population of 144,948,356. In 1853 the total area was 837,412 miles, population 131,990,901; thus showing an increase in twelve years of 119,024 miles, and 12,957,455 of population.

FRENCH POSSESSIONS.—Chandernagore' 28, in Bengal; Yanaon 6, in the Circars; Pondicher'ry 30, on the coast of the Carnatic, the capital of the French settlements in Hindostan; Carical' 10, on the coast of the Carnatic, to the south of Pondicherry; Mahè, on the coast of Malabar. The population of the French Possessions in 1865 was 203,887.

PORTUGUESE POSSESSIONS.—New Go'a or Panjim 20, the seat of government, between Concan and Canara; Damaun' 6, in Guzerat; Diu, a small fort and island south of Guzerat. The population of the Portuguese Possessions in 1865 was 313,262.

NATIVE STATES.—*In Bengal:* CASHMERE or Golab Singh's Dominions; GWALIOR or Scindia's Possessions; INDORE; HYDERABAD or the Nizam's Dominions; NEPAUL; RAJPOOT STATES, etc., having an aggregate area of 414,661 square miles, with a population of 28,224,448. *In Madras:* MYSORE, TRAVANCORE, etc., having, in all, an area of 116,125 square miles, and a population of 12,880,228. *In Bombay:* CUTCH, KOLAPORE, etc., having a total area of 66,004 square miles, and a population of 6,804,523. Nearly all the Native States of Hindostan are under British protection.

Hindostan is situated between 8° 4' and 36° N. Lat., and between 66° and 91° E. Long. Its greatest length, from the Himmalehs in Cashmere to Cape Comorin, is 1800 miles; its greatest breadth, from the Hala Mountains in Sindh to the eastern extremity of Assam, about 1800 miles; its superficial extent, about 1,554,480 square miles. With the exception of the Himmaleh Mountains on the northern frontier, and some other ranges, Hindostan may be considered as a vast undulating plain.

Except in the north, where the mountains are generally covered with snow, the climate may be regarded as hot. Winter is scarcely known; excessive rains, or excessive heats, form the

chief varieties of the year. In Bengal, the dry or hot season begins in March, and continues to the end of May; the rainy period extends from June to October. The soil is remarkably fertile, consisting, in not a few instances, of rich black mould to the depth of six feet, and yielding, in many places, two harvests in the year.

The chief vegetable productions are rice, wheat, maize, millet, barley, sugar-cane, coffee, cotton, indigo, opium, cocoa and Areca nuts, caoutchouc, pepper, cajeput, oil, spikenard, etc., besides many delicious fruits in great profusion. But, perhaps, the most remarkable vegetable production of India is the banyan-tree: its branches send out shoots which fall to the ground and fix themselves there, becoming in time large trunks, and forming a little grove around the parent stem. Besides the common domestic animals, the buffalo, the camel, and the elephant are particularly important. Among the wild animals are the lion, which is only seen among the northern mountains, the Bengal or royal tiger, the rhinoceros, the hunting leopard, the elephant, the hyena, the jackal, the antelope, the boar, and many species of the monkey tribe.

Hindustan is remarkably rich in minerals, producing iron, copper, silver, gold, and precious stones, the most valuable being the diamond, found in various districts.

About nine-tenths of the people are followers of Brahminism. They worship a number of gods, of whom Brahma, Vishnu, and Siva are the chief. They believe in the transmigration of the soul after death from one body to another.

Almost every village has its school, open to all boys of pure caste, who are taught reading, writing, and arithmetic. The government has established colleges for teaching the higher branches of education; and the natives exhibit great eagerness to avail themselves of an English education for their children; several of the schools and colleges have already produced accomplished scholars. The Hindoos are gentle and inoffensive in disposition, but rather indolent; they are much attached to the comforts of domestic life.

The government in the Native States was despotism in its most oppressive form, but this has been greatly modified since the British obtained the ascendancy.

The direction and control of the civil and military government of British India is vested in a Governor-General and Councillors, styled "the Governor-General of India in Council,"

who are subject to the orders of the Secretary and Council of State for India in the United Kingdom, who again are responsible to the British legislature. The capitals of the three presidencies are subject to the laws of England, administered by judges appointed by the Crown. But in the rest of India justice is administered according to the Hindoo or Mohammedan law, by various courts under European and native judges, from whose decisions appeals lie to the supreme courts of civil and criminal law in each presidency, and ultimately to the Queen in Council.

The population in 1865 was said to be 193,874,704.

EXERCISES.—How is Hindostan bounded? Point out its divisions. Which is the most easterly division? the most southerly? the most westerly? the most northerly? Where is the Bay of Bengal? What gulfs extend into Guzerat? How is Ceylon situated? Name its towns. Where is Palk's Passage? Jugget Point? Comorin Point? the Himmaleh Mountains? Name the highest of this range. What is its height? What else is stated of it? Where is Adam's Peak? Where does the Indus rise, in what direction does it flow, and into what does it fall? Name its tributaries. In what direction do the Ganges and Brahmapootra flow, and into what do they fall? Name the tributaries of the Ganges. What is the capital of British India? In what division, and on what river, is it situated? What is stated of Patna? Cashmere? Delhi? Poonah? In what division is Madras, and how is it situated? What is stated of it? What is the great emporium of Western India? How is it situated? What is stated of Seringapatam? Bejapore? Calicut? Tanjore? Juggernaut? Allahabad? Bhurtpore? Name the chief seat of learning of the Brahmins. Where, and when, was the first commercial establishment of the English founded?

For what is Moulthan noted? Tatta? Masulipatam? Point out the British Possessions in Hindostan. What are the French Possessions? the Portuguese? Name the Native States. What is the population of Calcutta? Madras? Bombay? Patna? Lucknow? Delhi? Dacca? Surat? Benares?

Between what degrees of latitude and longitude is Hindostan situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate? what of the soil? Mention some of the vegetable productions. What is the most remarkable? What are the domestic animals? Name the wild ones. Enumerate the mineral productions. Of what religion are nine-tenths of the people followers? What do they worship? In what do they believe? In what state is education? What is the character of the Hindoos? What is the government in the Native States? In whom is the control of affairs in British India vested? To what laws are the capitals of the three Presidencies subject? How is justice administered in the rest of India? To whom do appeals lie from these courts? What is the population?

THE EASTERN PENINSULA,

OR

INDIA BEYOND THE GANGES,

Is bounded on the N. by China and Tibet; W. by Hindostan and the Bay of Bengal; S. by the Straits of Malacca and the Gulf of Siam'; E. by the Chinese Sea and the Gulf of Tonquin'.

DIVISIONS.—The Bir'man Empire or Ava; Siam'; the British Territories, comprehending As'sam, Chittagong', Aracan', Pegu', the Tenasserim Provinces (Martaban', Ye, Ta'voy, and Tenasserim), the Eastern Straits Settlements (Prince of Wales' Island or Pulo-Penang', Province Wellesley, Malacca, and Singapore'); the Malay States; Cochin-China or the Empire of Annam, comprehending part of Cochin-China Proper, and Ton'quin; La'os; Cambo'dia; the French Territory of Sai'gong.

GULFS.—Martaban', Siam, Tonquin.

ISLANDS.—Domei, St Matthew, Junk-seylon or Salang, Pulo-Penang or Prince of Wales' Island (containing George Town); Singapore' (with a town of the same name with extensive commerce); Tanta'lem.

STRAITS.—Malacca, Singapore.

PENINSULA.—Malay'a or Malacca.

CAPIES.—Negra'is, Roma'nia, Cambo'dia.

RIVERS.—Irrawa'dy, Saluen' or Thaluen', Mei'nam, May-kaung' or Cambo'dia, Sangko'i.

PRINCIPAL TOWNS.—In the BIRMAN EMPIRE.—Mandalay, a fortified city, the modern capital of the empire, 90; A'va, a decayed city, ruined by an earthquake in 1839; Moncho'bo, a walled town, on a lake,

twenty-seven miles north from Ava; Bha'mo 10, with a great trade.

SIAM.—Ban'kok 350, with houses built upon bamboo rafts moored along the banks of the river Meinam; Si-yo-thi-ya or Siam; Quedah; Ligor; Patani.

BRITISH TERRITORIES.—Rungpoor' 15; Chittagong' or Islamabad' 12; Aracan 10; Pegu 5, containing the famous temple of Shoemadoo or the Golden Supreme; Rangoon' 15, a thriving seaport, stormed and taken by the British in 1852; Prome 100, a very ancient city; Martaban' 6; Moul'mein 44, with a considerable trade; Am'herst 5, founded by the British in 1826; Ta'voy 10; Mer'gui 8; Tenasserim; George Town, in Prince of Wales' Island, the capital of the Eastern Straits Settlements; Malacca 12; Singapore 16, a flourishing seaport on the island of the same name.

MALAYA or MALACCA.—Salangore'.

COCHIN-CHINA or the EMPIRE OF ANNAM.—Huè 100, the capital, a strongly-fortified city; Sai'gong 180, a fortified town, lately taken possession of by the French, along with the neighbouring territory; Turon'; Ke'sho or Kacha'o 150.

LAOS.—Lan'chang or Han'niah 50.

CAMBODIA.—Panom'ping 20, U'dong 12, Cambodia.

The Eastern Peninsula is situated between 1° 20' and 28° N. Lat., and between 90° and 109° E. Long. Its length from north to south is 1800 miles; its breadth from east to west, 960; its superficial extent, about 700,000 square miles. The general appearance of the country is diversified by long parallel ranges of mountains, which divide it into a number of valleys, through each of which flows a considerable river.

The climate is various; in some places the heat is moderate, but in others it is excessive. The soil, where sufficiently moistened, is remarkably fertile, but where rain is deficient, it is scorched and barren.

The usual products of tropical climates are found in great plenty, viz., rice, sugar, tea, cotton, indigo, pepper, the sago and

cocoa palms, many fine fruits, and medicinal and aromatic plants. The forests are peculiarly magnificent, from the gigantic height of their timber; and the whole country is rich in mineral treasures. Elephants, tigers, and different species of monkeys, are numerous. The elephants of Siam are much esteemed for their sagacity and beauty.

The prevailing religion is Buddhism. The governments of all the native states are pure despotisms.

The population is estimated at about 22,000,000.

EXERCISES.—How is the Eastern Peninsula bounded? Point out its divisions. Which is the most southerly? the most northerly? Where is the Gulf of Tonquin? Martaban? Siam? Where are the islands of Singapore and Pulo Penang? Where are the Straits of Singapore? of Malacca? Where is Cape Roumania? Name the rivers in the Eastern Peninsula. What town is the capital of the Birman Empire? What is stated of Mandalay and Ava? Rangoon? Malacca? Saigong? Pegu? What is the population of Mandalay? Bankok? Saigong? Name the British Territories. Name the French Territory.

Between what degrees of latitude and longitude is the Eastern Peninsula situated? What are its length, breadth, and superficial extent? What is the general appearance of the country? What is the nature of the climate and soil? Name some of the vegetable productions. What animals are numerous? What is the prevailing religion? What are the governments of the native states? What is the population?

THE CHINESE EMPIRE

Is bounded on the N. by Asiatic Russia; W. by Asiatic Russia, Eastern Turkestan, and Hindostan; S. by Hindostan, the Eastern Peninsula, and the Chinese Sea; E. by the Yellow Sea and the Pacific Ocean.

DIVISIONS.—CHINA PROPER; MANDCHOO'RIA; MON-
GO'LIA; TIBET.

GULF.—Pechelee'.

ISLANDS.—Hai'nan, Maca'o (belonging to the Portuguese), Hong Kong (ceded to the British in 1842), Amoy', Formo'sa, Loo Choo, Chusan'.

STRAIT.—Formosa.

MOUNTAINS.—Teen-Shan', Kwan-lun', Karako'rum, Khin-gan, Belour'-tagh, Himmaleh.

RIVERS.—Amur' or Sagalien, Pei'ho, Hoang-ho or Yellow River, Yang-tse-Kiang' or Kian-ku' or Blue River, Choo-Kiang' or Ta, Sanpoo'.

LAKES.—Hang'-tse, Tai, Po'yang, Tong-Ting', Koko-Nor', Zaizan', Pal'tè, Manasarowa'ra or Sacred Lake.

CHINA PROPER is divided into eighteen Provinces.

PRINCIPAL TOWNS.—Pekin', the capital of the empire, a fortified city about eighteen miles in circumference, with a population estimated at 2,000,000: it was taken by the British and French forces in 1860; Nankin' 1,100,000, noted for the cottons bearing its name; Canton', about 1,200,000, long the only port with which Europeans were permitted to trade; Sou'-chew 500, and Shang-hai' 400, places of great trade; Hang-chew' 600, with an extensive trade in raw silks and green tea; Fou'-chew, about 1,000,000; Amoy' 250, the emporium of the trade with the Indian Archipelago, Formosa, and the maritime provinces of the empire; Nant-chang' 300, with a great trade in silk and furs, and a manufactory of idols; Ning-po' 250, about 12 miles from the sea, with a great trade in silks and green teas.

In MANDCHOORIA.—Mouk'den or Chin-Yang'; Kir'-in-ou'la. In MONGOLIA.—Our'ga 7; Mai-mat'-chin, with a thriving trade with Russia; I'li or Goul'ja 40, the entrepôt of the trade with Central Asia. In TIBET.—Las'sa 25, near which is the vast temple of Pootala, the summer residence of the Dalai or Grand Lama; Te'shoo-lom'boo, the residence of a lama, near the frontier of Bootan.

The Chinese Empire is situated between 20° and 55° N. Lat., and between 75° and 140° E. Long. Its length from east to west

is about 3000 miles; its breadth from north to south, about 2400 miles; its superficial extent, about 4,100,000 square miles.

China Proper, though presenting every variety of surface, may, in general, be considered as a level country, intersected by many large rivers and canals. Mongolia exhibits great diversity of appearance; its distinguishing features are immense plains or tablelands and extensive sandy deserts, particularly that of Gobi or Shamo, 1400 miles in length. Tibet is a region of tablelands, deep valleys, and high mountains.

The climate of China Proper is various; in the southern provinces it is hot, but in the north more than all the rigours of a European winter are often felt. The soil is in general fertile; in some places there is a fine vegetable mould four or five feet in depth, and every spot capable of production is cultivated with the utmost care. Vast portions of the other countries forming the empire are arid deserts and sterile mountains, but there are many fertile plains and valleys.

The principal objects of cultivation in China Proper are rice and tea; of the latter of which the native botanists reckon 200 species. Among the other vegetable productions of this vast region may be mentioned the orange, lemon, sugar-cane, pomegranate, wheat, millet, barley, and oats. In the deserts of Mongolia are found the true rhubarb and the ginseng, the universal medicine of the Chinese. Most of the domestic animals known in Europe are reared in the Chinese Empire, but the breeds are inferior. Among the wild animals may be noticed the elephant, tiger, rhinoceros, musk-deer, boar, horse, grunting ox or bushy-tailed bull of Tibet, etc.

The chief minerals are gold, silver, iron, copper, etc. Of those peculiar to China Proper may be noticed a natural combination of iron and zinc called *tutenag*; a species of white copper called *petong*; and the fine clays and earths called *petunise*, from which porcelain is made.

The religion of the higher ranks in China Proper is a kind of deism; the lower classes are Buddhists. The Mandchoos and Mongolians are Buddhists. In Tibet, the Dalai or Grand Lama, or spiritual sovereign, is the object of religious worship; he is considered by his votaries as an incarnation of the Deity, and is supposed to pass by transmigration from one body to another.

In China Proper, literature is the only channel to advancement in the state, and to the acquisition of office, rank, and honours; hence a taste for letters is almost universally diffused. Schools

abound in every town and village, and the best education which the country affords may be obtained on very moderate terms. The Chinese are peaceable, industrious, and orderly; but they are cowardly, deceitful, and cunning, and have little or no regard for truth. The Manchooks are indolent, poor, and proud; the Mongolians, simple, kind, and hospitable; the Tibetians, mild and honest.

The government of China is a sort of *patriarchal* despotism; but the officers of the government, called *mandarins*, are chosen, according to fixed rules, from the literary class.

The population of China Proper is estimated at 450,000,000; that of Mongolia and Manchooria, about 12,000,000; that of Tibet, about 5,500,000.

EXERCISES.—How is the Chinese Empire bounded? Name and point out its divisions. Where is the island of Hainan? Chusan? Macao? Hong Kong? Formosa? Where are the Belour-tagh Mountains? Teen-Shan? Trace the rivers in the Chinese Empire. Point out its lakes. What is the capital of China Proper? For what is Nankin noted? Where is it situated? What is stated of Canton? What island was ceded to the British in 1842? What is stated of Sou-chew? Fou-chew? Amoy? Ning-po? Nant-chang? What is near Lassa? What is the population of Pekin? Nankin? Hang-chew? Amoy? Ning-po? Ourga? Goulja?

Between what degrees of latitude and longitude is the Chinese Empire situated? What are its length, breadth, and superficial extent? What is the general appearance of China Proper? What are the distinguishing features of Mongolia? What is the general appearance of Tibet? What is the nature of the climate and soil of China Proper? What are the principal objects of cultivation in China Proper? How many species of tea do the Chinese botanists reckon? Mention some of the other vegetables. What are found in the deserts of Mongolia? Name the wild animals of China. Enumerate the chief minerals. Which are peculiar to China Proper? What is the religion of China Proper? of the Manchooks? of the Mongolians? Who is the object of religious worship in Tibet? What is the state of education? What is the character of the Chinese? of the Manchooks? of the Mongolians? of the Tibetians? What is the government of China? What is the population of China Proper? of Mongolia and Manchooria? of Tibet?

COREA

Is bounded on the N. by Manchooria; W. and S. by the Yellow Sea; E. by the Strait of Corea.

MOUNTAINS.—The Chang'-pe-shan range.

CHIEF RIVER.—Toumen-Kiang'.

PRINCIPAL TOWNS.—King-kita'-o, the capital; Ping-yang.

Corea is situated between 33° and 43° N. Lat.; and between 124° and 130° E. Long. Its area is estimated at 87,760 square miles.

The Coreans are such an exclusive people, that little is known of their country to Europeans beyond the fact that it is peninsular and mountainous. They have a literature of their own. Commerce is carried on with China and Japan. In religion, as well as in general habits, the Coreans resemble the Chinese. The government is despotic. The population is estimated at 9,000,000.

EXERCISES.—How is Corea bounded? Name its principal mountain range. What is its chief river called? What is the name of the capital?

Between what degrees of latitude and longitude is Corea situated? What is known regarding the country? With what nations is commerce carried on? In what do the Coreans resemble the Chinese? What is the population of Corea?

THE EMPIRE OF JAPAN

Consists of four large and a group of smaller islands in the Pacific Ocean, to the east of Corea and the Maritime Province of Asiatic Russia. The large islands are Nippon', Jes'so, Sikokf', and Kiu'siu'.

PRINCIPAL TOWNS.—In NIPHON.—Jed'do 1,700, the capital of the empire, with an extensive trade; Mia'co 800, with various manufactures and large trade; Osaka' 150, the port of Miaco, laid waste by an earthquake in 1854; Kanaga'wa; Simoda.

JESSO.—Mats'mai 50, with a flourishing trade; Hakodadi.

SIKOKF.—Tosa.

KIUSIU.—Nangasa'ki 80, long the only port at which foreigners were permitted to trade; but since 1854, Simoda, Matsmai, Hakodadi, Kanagawa, and others have been opened to the commerce of Europe and America.

The Empire of Japan is situated between 31° and 49° N. Lat., and between 129° and 150° E. Long. Its length is about 1500 miles; its breadth varies from 50 to about 200 miles; its superficial extent is about 260,000 square miles. The principal islands have a very uneven surface, interspersed with rocky hills. Fusi, the highest peak of the mountain-chain in Nippon, is upwards of 12,000 feet above the sea-level.

The climate in the north is cold; in the south, though more variable, it is nearly as warm as in the south of France. Although the soil is not naturally fertile, the diligent cultivation of the inhabitants has rendered it very productive.

Among the vegetable productions may be mentioned cotton, tobacco, ginger, pepper, rice, barley, beans, buck-wheat, potatoes, melons, etc. Next to rice, tea is the great object of cultivation. Among the wild animals are boars, bears, foxes, deer, etc. The mineral wealth of the country is very great, comprising gold, silver, copper, tin, lead, coal, and sulphur.

The prevailing systems of religion are Buddhism, and Sinto or a kind of polytheism. Education is more generally diffused than perhaps in any other country of Asia. The Japanese are intelligent and desirous of knowledge.

The government is a hereditary absolute monarchy.

The population is estimated at 35,000,000.

EXERCISES.—Where are the islands that compose the Empire of Japan situated? Name the principal of them. Which is the largest? What is the capital of Japan? How is it situated? What is stated of it? What is stated of Miaco? of Osaka? of Nangasaki? What is the population of Jeddo? Miaco? Osaka?

Between what degrees of latitude and longitude is the Empire of Japan situated? What are its length, breadth, and superficial extent? What is the appearance of the principal islands? What is the height of Fusi? What is the nature of the climate and soil? Mention some of the vegetables. Name the wild animals. What does the mineral wealth comprise? What are the prevailing systems of religion? In what state is education? What is the character of the Japanese? What is the government? What is the population?

EASTERN TURKESTAN

Is bounded on the N. by the Dzungarian district of Mongolia; W. by Western Turkestan; S. by Hindostan and Tibet; E. by Mongolia.

DIVISIONS.—Northern Provinces, Khoten', Yarkand', Cash'gar.

MOUNTAINS.—Kuen-lun'.

LAKEs.—Lob Nor', Bastan' or Bosteng'.

RIVERS.—Ta'rim, Yarkand, Cashgar.

CHIEF TOWNS.—Karashar', Khoten or Il'chi, Yarkand 32, Cashgar 16.

Eastern Turkestan is situated between 35° and 44° N. Lat., and between 72° and 95° E. Long. Its length from east to west is about 1600 miles, and its breadth from north to south about 600 miles. The area is estimated at 50,000 square miles.

To the north-east of Khoten the country is desert and waste, but to the west it is rich and fruitful. The mountains are wealthy in gold, silver, and other minerals.

The people are of a hybrid stock,—Kirghiz and Persian, with an admixture of Calmucks. They were formerly under the dominion of China, but in 1863 they revolted, and massacred all the Chinese near them who would not adopt the Mohammedan religion. Population estimated at 22,500,000.

WESTERN TURKESTAN

Is bounded on the N. by Asiatic Russia; W. by the Caspian Sea; S. by Persia, Afghanistan, and Hindostan; E. by Eastern Turkestan.

DIVISIONS.—Kokan', Kha'rism or Khi'va, Bucharía or Bokha'ra, Koon'dooz.

LAKE OR INLAND SEA.—The Caspian Sea.

MOUNTAINS.—Hindoo Coosh, Belour-tagh.

RIVERS.—Gihon or Amoo' (*Oxus*); Sirr-Dari'a (*Jaxartes*).

PRINCIPAL TOWNS.—In KOKAN.—Kokan 50, on the Sirr-Daria.

KHARISM.—Khi'va 12, near the Oxus.

BUCHARIA.—Bokhara 160, with numerous colleges, is the seat of an extensive trade; Samarcand' 25, was the capital of Timour or Tamerlane, the famous conqueror, and is still held in high veneration by the people; Balkh, the ancient *Bactra*, regarded by the Asiatics as one of the oldest cities in the world.

KOONDOOZ.—Koondooz; Khooloom'; Buduk'shan 10.

Western Turkestan is situated between 35° and 44° N. Lat., and between 51° and 78° E. Long. Its length from east to west is 1300 miles; its breadth from north to south, about 600 miles; its superficial extent, about 641,000 square miles.

The climate is subject to the extremes of heat and cold. The soil, except on the banks of some of the rivers and lakes, is generally sterile.

The natural productions, with the exception of silk, cotton, and wool, are comparatively few in number, and of little consequence. The religion is Mohammedanism. The governments are more or less despotic; each horde or tribe is governed by its own khan.

The population is estimated at 7,800,000.

EXERCISES.—How is Eastern Turkestan bounded? What are its divisions? Name its chief towns. What is stated regarding the people of Eastern Turkestan? What is the population? What are the boundaries of Western Turkestan? Name its divisions. Where is the Caspian Sea? Into what do the Gihon and Sirr-Daria flow? What were the ancient names of these rivers? Where are the Belour-tagh Mountains? In what division is Bokhara? What is stated of it? What is said of Samarcand' Balkh? What is the population of Bokhara? Kokan?

Between what degrees of latitude and longitude is Western Turkestan situated? What are its length, breadth, and superficial extent? What is the nature of the climate and soil? What is said respecting the natural productions? What is the religion? What is the government? What is the estimated population?

ASIATIC RUSSIA

Is bounded on the N. by the Arctic Ocean; W. by Russia in Europe; S. by Persia, and Eastern and Western Turkestan; E. by the Pacific Ocean.

DIVISIONS.—Caucasia; Western Siberia; Eastern Siberia.

SEAS AND GULFS.—Sea of Ka'ra, Gulf of O'by, Gulf of An'adir, Sea of Kamtschatka, Sea of Ochotsk', Gulf of Tartary.

ISLANDS.—Aleutian Islands, Ku'rite Isles, the northern part of Saghalien or Tarakai Island, New Siberia.

STRAITS.—Behring's.

PENINSULA.—Kamtschatka.

CAPEs.—Severo, the most northerly point of the continent of Asia; East Cape, the most easterly point of Asia; Lopat'ka.

MOUNTAINS.—Caucasus, Ural, Altaï'an, Stanovoi.

RIVERS.—Kur, Ural, Le'na (with its tributary Aldan); Yen'isei (with its tributaries Anga'ra and Tongouska); O'by (with its tributary Ir'tish); Amur or Sagalien.

LAKES.—Sea of Aral, Bal'kash, Bai'kal, Tchan'y, Erivan.

PRINCIPAL TOWNS.—In CAUCASIA.—Tiflis or Teflis 38, the capital of Georgia, celebrated for its hot baths; Erivan 15, with a strong fortress on a precipitous rock; Ba'ku 5, a fortified seaport on the Caspian, in the neighbourhood of naphtha-springs; Der'bend 13, a fortified seaport on the Caspian, ceded to Russia by Persia in 1796.

WESTERN SIBERIA.—Tobolsk 16, with a considerable trade; Omsk 16, with a military college; Tomsk

10; Kolyvan', in the neighbourhood of rich silver-mines; Turkestan, capital of the recently acquired territory of that name; Tash'kend.

EASTERN SIBERIA.—Irk'utsk 23, a flourishing commercial city; Kiach'ta 5, the great seat of the Russian trade with China; Yak'utsk, the seat of the fur trade; Ochotsk; Pretropaul'ovski 6, with a good harbour.

Asiatic Russia is situated between 37° E. and 170° W. Long., and between 37° and 78° N. Lat. Its length, from the southern extremity of the Urals to Behring's Straits, is upwards of 4000 miles; its greatest breadth from north to south, about 2000 miles; its superficial extent, about 5,700,000 square miles. It may be described generally as an immense plain, sloping upwards from the Arctic Ocean to the Altaian and Ural Mountains, but with an ascent so gradual as to be scarcely perceptible.

The climate in the north is excessively cold; the winter lasting for nine or ten months. The soil in the south-western parts, and in the valley of the Amur, is remarkably fertile, but three-fifths of Siberia are scarcely susceptible of any sort of culture.

The Siberian dog, not unlike the wolf, serving as an animal of draught; the rein-deer supplying the place of the horse and the cow, the wild-horse, the wild-ass, the musk-animal, the white and brown bear, the ounce, the argali or wild-sheep, the lynx, the glutton, etc., are found in this country: martins, marmots, ermines, sables, and squirrels are the principal animals hunted for their skins. Siberia is rich in minerals, comprising iron, copper, platina, silver, gold, etc.

The Greek church is the religion of the government; but some tribes are Shamanists, others Mohammedans, etc.

The population is estimated at 8,322,000.

EXERCISES.—How is Asiatic Russia bounded? What are its divisions? Where is the Gulf of Anadir? the Gulf of Oby? Sea of Ochotsk? the Gulf of Tartary? Where are the Kurile Islands? Aleutian? Saghalien or Tarakai Island? What is the most northerly cape of Asia? the most easterly? Where is Cape Lopatka? Where are the Stanovoi Mountains? the Yablonoi Mountains? the Ural Mountains? Caucasus Mountains? In what direction, and into what, does the Oby flow? the Yenisei? the Lena? Where is Lake Baikal? Tchany? Erivan? On what river is Tobolsk situated?

How is Irkutsk situated? What is stated of it? What is said of Kiachta? What is the population of Tobolsk? Irkutsk? Omsk?

Between what degrees of latitude and longitude is Asiatic Russia situated? What are its length, breadth, and superficial extent? What is the general aspect of the country? What is the nature of the climate and soil? Name some of the animals. Mention the minerals. What is the religion of the government? What is the estimated population?

OCEANIA

Is the name which modern geographers have devised to distinguish the world of islands in the Pacific Ocean, extending from Sumatra and Australia east to the Sandwich Islands and the Marquesas, and from the New Zealand group north to the Tropic of Cancer.

I. MALAYSIA.

SUMA'TRA, noted for its spices,—chief towns, A'cheen 35; Palembang' 25; Bencoo'len 13; BAN'CA famed for its tin-mines; BIL'LRON, containing rich iron-mines; JA'VA,—chief towns, Bata'via 135, the capital of the Dutch East Indian Possessions; Samarang' 22; Sourabaya' 130, with a fine naval arsenal; Souracar'ta 10; Djocjocar'ta 90; MADU'RA; BA'LI; LOM'BOK, noted for its superior cotton; SUMBA'WA, in which is Bi'ma, with an excellent harbour; FLOR'ES; TI'MOR,—chief town, Coupang'; BOR'NEO, with the exception of Australia, the largest island in the world,—chief towns, Borneo 22, with a flourishing trade; Sara'wak 15; Pontia'na; Banjermas'sin 7; LA'BUAN, belonging to Britain; CEL'EBES,—chief towns, Macas'sar; Bo'ny 8; the MOLUC'CAS or SPICE ISLANDS, belonging to Holland, the principal being GILO'LO; CERAM'; AMBOY'NA, noted for its cloves; TER'NATE; TI'DOR; BAN'DA, famous for its nutmegs; TI'MOR-LAUT; GREAT KEY,—chief town,

ELY; the PHILIPPINE ISLANDS, belonging to Spain, the chief being LUZON,—chief towns, Manilla 140, with an extensive commerce; Cavité 15; MINDANA'O, with a town of the same name; PALA'WAN; MINDO'RO; PANAY; NE'GROS; LEBU'; BO'HOL; LEYTE'; SA'NAR; MAC'TAN, in which the celebrated voyager Magellan was killed in 1521; SOOLOO', noted for its ambergris, and for its pearl-fishery.

STRAITS.—Sun'da, Banca, Macassar, Molucca Passage, Gilolo Passage.

These islands are situated between 21° N. and 11° S. Lat., and between 95° and 131° E. Long.; extending from east to west about 2500 miles, and from north to south about 2000 miles. Their superficial extent is estimated at about 1,000,000 square miles. Their general appearance is mountainous.

Situated within the tropics, the climate is exceedingly warm. The soil of the greater part of the islands is very fertile, and produces rice of the best quality, sago, cloves, and nutmegs of the finest sort, tobacco, sugar-cane, pepper, and all kinds of spices; cotton, coffee, hemp, sandal-wood, indigo, and a great variety of fine fruits. The principal domestic animals are horses and sheep of a small breed, goats, swine, and cattle; the wild animals are elephants, tigers, bears, deer, and innumerable species of monkeys. Among the mineral productions may be mentioned diamonds, gold, silver, copper, tin, iron, coal, sulphur, arsenic, saltpetre, etc.

The greater part of the people are Mohammedans; a considerable number profess Christianity; Buddhism and Brahminism have their followers; and some of the native tribes are Pagans. The natives are hospitable and cheerful, but revengeful and reckless of human life. The Malays are the most noted pirates in the world.

Every variety of government, from the patriarchal to the extremity of despotism, prevails in these islands.

The population is supposed to be about 27,000,000.

EXERCISES.—Point out the Malaysian Islands. For what is Sumatra noted? Name its chief towns. For what is Banca famed? Lombok? Amboyna? Banda? Sooloo? What are the chief towns

in Java? What is said of Batavia? To what European nation does Labuan belong? the Philippine Islands? the Moluccas? What are the chief towns in Celebes? What is stated of Borneo? Name its chief towns. In what island is Manilla? What is stated of Mactan? Where are the Straits of Sunda? Macassar? Molucca Passage? What is the population of Batavia? Acheen? Manilla?

Between what degrees of latitude and longitude are the Malaysian Islands situated? What is their extent from east to west, and from north to south? What is their superficial extent? What is their general appearance? What is the nature of the climate? What is the nature of the soil? Mention some of the vegetable productions. Name the domestic animals. Name the wild animals. Enumerate the mineral productions. What religions are professed? What is the character of the natives? What is said of the Malays? What forms of government prevail? What is the estimated population?

II. AUSTRALASIA.

Comprehends AUSTRALIA (formerly called New Holland), the largest island in the world, TASMANIA (formerly called Van Diemen's Land), PAPUA OR NEW GUINEA, NEW BRITAIN, NEW IRELAND, NEW HANOVER, ADMIRALTY ISLES, SOL'OMON ISLANDS, NEW HEBRIDES, NEW CALEDONIA, NORFOLK ISLAND (peopled in 1856 by the descendants of the mutineers of the Bounty), LORD HOWE'S ISLAND, NEW ZEALAND, CHATHAM, AUCKLAND, and MACQUARIE Islands.

AUSTRALIA is divided into *New South Wales*,—chief towns, Sydney 100, with a rapidly-increasing commerce; Paramatta; Liverpool 5; Bathurst 12; Newcastle; Maitland 6; Carrington.

Queensland (formerly called Moreton Bay).—Brisbane.

Victoria (formerly called Port Phillip).—Melbourne 125; Geelong 23; Portland.

South Australia.—Ad'elaide 18; Koorin'ga 5.

West Australia.—Perth; Free'mantle; Al'bany.

GULFS AND BAYS.—Carpenta'ria, Port Es'sington, Van Diemen's, Cambridge, King's Sound, Exmouth, Shark Bay, Ge'ographe Bay, Flin'der's Bay, King George Sound, Great Australian Bight, Spencer, St Vincent, Encounter Bay, Port Phillip, Bot'any Bay, Port Macquarie, More'ton Bay, Hervey Bay, Broad Sound, Princess Charlotte Bay.

ISLANDS near the coast of Australia.—Well'sleys, Groota, Mel'ville, Ba'thurst, Kangaroo', King's, Great Island.

STRAITS.—Tor'res, Bass, Clarence, Endeavour.

CAPIES.—York, Dale, Londonderry, Leveque', N. W. Cape, Leeu'win, Spencer, Wilson, Howe, Sandy.

MOUNTAINS.—Blue Mountains, Liverpool Range, Australian Alps or Warragong' Mountains, Grampians, Pyrenees, Flinder's Range, Victoria Mountains, Darling Range, Australian Andes.

RIVERS.—Brisbane, Hastings, Hunter, Hawkes'bury, Murray (with its tributaries Darling, Lach'lan, Morumbid'gee), Swan, Fitzroy, Prince Regent, Victoria, Adelaide.

TASMANIA.—Chief Towns: Hob'art Town 22, with a fine harbour and a flourishing trade; Launce'ston 10, with a rising commerce; George Town. The principal rivers are the Der'went and the Tamar. The highest mountains are Cradle Mountain, 5069 feet, and Ben Lomond 5010 feet, above the sea-level.

NEW ZEALAND consists of three islands, viz., North Island, South Island, and Stewart's Island.—Chief Towns: Auckland 10, New Plymouth, Napier, and Wellington, in North Island; Nelson, Christchurch,

Picton, Dunedin, and Invercargill, in South Island. The highest mountain, Mount Cook, in South Island, is 12,460 feet above the level of the sea.

The islands comprehended under the name of Australasia are situated between 1° and 55° S. Lat., and between 112° and 180° E. Long.

Australia is not yet completely explored: its greatest length from east to west is about 2400 miles; its greatest breadth from north to south, 1970 miles: its superficial extent, about 3,000,000 square miles. The east coast throughout its whole extent is bounded by ridges of steep, and in some places lofty mountains, between which and the ocean is a belt of cultivable land intersected by short rivers. The southern coast is low and sandy; in many parts there are extensive plains which afford pasturage for numerous flocks of cattle and sheep.

Tasmania is about 200 miles in length from north to south; its breadth from east to west is about 150 miles; its superficial extent, about 27,000 square miles. The general aspect is mountainous, varied by lofty tablelands and extensive fertile valleys and plains.

New Zealand is about 1100 miles in length from north to south, and about 105 miles, in average breadth, from east to west; its superficial extent is about 120,000 square miles. Its two larger islands are traversed in their whole length by a chain of mountains, the summits of which are covered by perpetual snow.

The climate in the south and south-east of Australia is temperate and pleasant; the climate of Tasmania is not very different from the maritime parts of New South Wales. The climate of New Zealand resembles that of Great Britain.

The chief vegetable productions are wheat, barley, oats, maize, millet, and tobacco; wine of good quality is produced in several places. The grand staple product of Australia is wool; and cattle are reared in great numbers. Copper, iron, lead, and coal have been discovered, and gold is found in many districts of Australia in great abundance.

The Protestant is the prevailing religion; but there are many Roman-catholics; and all sects enjoy equal privileges. The manners of the colonists are similar to those of the people of Great Britain.

The European population is about 1,548,000.

EXERCISES.—Point out the islands of Australasia. What is stated of Australia? Name its divisions. What is said of Norfolk Island? Where is New Zealand situated? What are its chief towns, and where are they situated? What is the chief town in Victoria? in Queensland? in South Australia? Name the chief towns in New South Wales, and in West Australia. Where is Tasmania situated? Name and describe its chief towns. What are its principal rivers? Where are Bass's Straits? Torres? How is Sydney situated? What is its population? In what direction do the Murray and Darling flow? Where is Swan River? Port Phillip? Botany Bay? Kangaroo Island? the Blue Mountains? King's Island? Cape York? Cape Londonderry? N. W. Cape? Cape Howe? Sandy Cape? What is the population of Hobart Town? of Melbourne?

Between what degrees of latitude and longitude are the islands comprehended under the name of Australasia situated? What are the length and breadth of Australia? of Tasmania? of New Zealand? What is the general aspect of Australia? of Tasmania? What is the nature of the climate? Mention the chief vegetable productions. What is the grand staple product of Australia? What minerals have been found? What is the prevailing religion? What are the manners of the colonists? What is the number of the European population?

III. POLYNESIA.

Comprises the PELEW' ISLANDS; the LADRONE' or MARIAN' ISLANDS (the principal of which are Gu'am, Rot'ta, and Tin'ian), and the BONIN' ISLANDS; the CAR'OLINE ISLANDS (principal, U'alan, Hog'oleu, and Yap); the MUL'GRAVE ISLANDS; the SAND'WICH ISLANDS (principal, Owhyee' or Hawaii', where Captain Cook was killed in an affray with the natives in 1779); the NAVIGATORS' ISLANDS (principal, Oyola'va, Po'la, Maoo'na); the FEEJEE' ISLANDS (principal, Vi'ti-Levou' and Sand'alwood Islands); the FRIENDLY or TON'GA ISLANDS (principal, Tongataboo', Eou'na, Anamou'ka); the SOCIETY ISLANDS (principal Otahe'ite or Tahiti, Ulite'a, Huahi'ne, and Eime'o); the LOW ISLANDS; the MARQUE'sas, belonging to France

(principal, Noukahi'va, Ohivo'a or Domini'ca, and Ouahou'ga); PITCAIRN'S ISLAND (noted as the place to which the mutineers of the *Bounty* retired in 1789); COOK'S ISLANDS (principal, Raroton'ga); the AUSTRAL ISLES; EASTER ISLAND.

The islands comprehended under the name of Polynesia are situated for the most part between 30° N. and 30° S. Lat., and between 133° E. and 110° W. Long.; extending in length from east to west about 8000 miles, and in breadth from north to south about 7000 miles. In regard to their general aspect they may be divided into three classes,—the mountainous, with an elevation of from 2000 to 13,000 feet; the hilly, from 100 to 500 feet in height; and the low coralline, very little above the level of the sea. Beauty and sublimity are the characteristics of the first class; the second is less romantic but equally beautiful; the third is tame and monotonous.

Nearly the whole of the islands being within the tropics, the climate is warm and equable. The soil of the first two classes is of good quality, but that of the third is in many places so thin as scarcely to support vegetation.

The principal vegetable productions are the bread-fruit tree, the cocoa-nut tree, plantains and bananas, sugar-cane and oranges. The principal animals are hogs and poultry; the dog is also very common. Coral of every variety of shape and hue is found in great profusion.

The religion of the natives was polytheism; but European missionaries have introduced Christianity in several of the groups, particularly in the Sandwich and Society Islands. The people in some of the islands are gentle and inoffensive, in others fierce, turbulent, and treacherous.

The government in all the islands is nearly the same, the people being under the absolute authority of hereditary chiefs who in some cases are subject to a sort of kings.

The population is estimated at 1,500,000.

EXERCISES.—Point out the islands comprised in Polynesia. Name the principal of the Sandwich Islands. What occurred there, and when? What are the principal of the Friendly Islands? To what country do the Marquesas belong? For what is Pitcairn's Island noted?

Between what degrees of latitude and longitude are the islands of Polynesia chiefly situated? What is their extent in length and

breadth? What is their general aspect? What are the characteristics of their several classes? What is the nature of the climate and soil? Mention the principal vegetable productions. Name the chief animals reared in the islands. What is found in great profusion? What was the religion of the natives? By whom has Christianity been introduced? What is stated of the people? What is the government? What is the population?

AFRICA.

FOR THE GENERAL DIVISIONS OF AFRICA, see page 14.

BARBARY,

On the north of Africa, stretches along the coast of the Mediterranean, from the Atlantic on the west to Egypt on the east, and is bounded by the Sahara or Great Desert on the south. It comprehends MOROCCO (including MOROCCO PROPER, FEZ, SUS, DRA'HA, SEGELMES'SA, TAF'ILET); ALGIERS or ALGERIA (comprising the three provinces of Algiers, Constantine', and Oran'); TUNIS; TRIPOLI (including FEZ'ZAN and BARCA).

BAYS AND GULFS.—Sy'dra, Ca'bes, Tunis.

CAPIES.—Bon, Spartel, Can'tin, Nun.

MOUNTAIN.—Atlas.

RIVERS.—Tensift, Morbeya or Om-erbegh, Seboo, Moulouia, Shellif, Mejer'dah (*Bag'rada*).

LAKES.—Faroon or Lowdeah (*Trito'nia Pa'lus*), Shott Molir.

PRINCIPAL TOWNS.—In MOROCCO.—Morocco 60; Fez 40, with manufactures of silk, wool, morocco leather, and hardware; Mogadore' 20, a fortified seaport, with a considerable trade with Europe; Mequinez' 70, a favourite residence of the emperor; Tet'uan 16, a fortified seaport within the Straits of Gibraltar; Sallee'

12, formerly the great resort of the Moorish pirates; New Sallee or Rabat' 21, on the opposite bank of the river, with considerable trade and some manufactures; Tangier' 10, a strong seaport, which belonged to Britain from 1662 to 1684; Ceu'ta 9, a fortified seaport, which has belonged to Spain since 1640.

ALGIERS or ALGERIA.—Algiers 58, a strongly-fortified city, bombarded by a British fleet, under Lord Exmouth, in 1816, and taken possession of by the French in 1830; Oran 37, long occupied by the Spaniards; Trem'ezen or Tlem'zan 22; Bo'na 15, near the site of the ancient *Hippo'na*, the episcopal see of the celebrated St Augustin; Constantine 34 (*Cir'ta*), with many interesting remains of Roman architecture; Tug'gart 18, with a great trade in fruits and salt.

TUNIS.—Tunis 200 (of whom 30 are Jews), with extensive trade and manufactures: ten miles to the north-east are the ruins of Carthage; Kair'wan 50, once a Saracen capital, with a splendid mosque, supported, it is said, by 500 columns of granite; Ca'bes 20, a seaport on the gulf of the same name, the *Syrtis Minor* of the ancients.

TRIPOLI.—Tripoli 15, with an extensive trade with the interior of Africa; Mesura'ta, with considerable inland trade; Mourzouk', the capital of Fezzan, the great rendezvous of caravans between the coast and the interior; Sock'na, celebrated for its dates; Der'na, a seaport, the capital of Barca; Benga'zi 11, the ancient *Beren'ce*.

Barbary is situated between 23° 30' and 37° N. Lat., and between 12° 30' W. and 25° E. Long., extending to about 2600 miles in length, and varying from about 150 to 550 miles in breadth. With the exception of the Atlas range of mountains, the country may be considered as level.

The climate in the eastern parts is unpleasant; the heat of the day and the cold of the night being equally intolerable. In

the southern districts, the atmosphere is so hot and oppressive that the inhabitants quit their houses to live under the shade of the palm-trees. In Western Barbary, notwithstanding some drawbacks, the climate may be said to be very fine; and, since Algeria was occupied by the French, it has become a resort of European invalids. In Morocco and Algiers, the soil is in general fertile. In Tunis, which was once considered the granary of the world, its fertility almost surpasses belief; the ground is so rich and productive that it requires only to be turned up with a stick in order to produce any kind of crop without manure or toil. Barca is nearly a sandy desert.

The chief vegetable productions are wheat, barley, maize, rice, rye, potatoes, tobacco, dates, figs, olives, vines, almonds, apricots, the sugar-cane, etc. Of the domestic animals the horse and the camel have been long famous; the sheep and the goat are also of great importance, both in number and value. Among the wild animals are the lion, panther, hyena, antelope, jackal, etc. The locust (which is eaten by the Moors) is a scourge to the country; it is said that one female lays 700,000 eggs in the sand, which are hatched in a very short time. Lead, antimony, copper, and silver are found in considerable quantities among the Atlas Mountains. Iron, lead, and copper abound in Algeria.

The prevailing religion is the Mohammedan. The people are represented as cruel, fickle, perfidious, and incapable of being restrained either by fear or by kindness.

The government is despotic.

The population is estimated at about 13,000,000.

SAHA'RA, or THE GREAT DESERT, is situated to the south of Barbary, and extends from the Atlantic to the confines of Egypt,—a distance of nearly 3000 miles, with an average breadth of about 1000 miles. Its interior is comparatively little known. Its dreary waste of sand or gravel and barren rocks is interspersed with fertile green spots or islands called *oases*, containing wells, and many of them thickly peopled. The principal *oases* are Ghad'ames, Fezzan, Si'wah, Bilma, Air or Asben, Ahir, and Ghat, in the eastern region of the Sahara; and Tuat, Hahi'rah, Gual'ata, Toudé'mi, Aro'wan, and Hoden, in the western region of the Sahara.

EXERCISES.—Where is Barbary? What are its boundaries? What countries does it comprehend? Which is the most westerly? the most easterly? the two most northerly? Where is the Gulf of Cabes? of Sydra? Cape Bon? Spartel? Mount Atlas? Mejerdah River? What was its ancient name? What is stated of Mequinez? Mogadore? Fez? New Sallee? Ceuta? Algiers? Where is Bona situated? For what is Constantine remarkable? What was its ancient name? What is stated of Tunis? What ruins are ten miles to the north-east of Tunis? For what is Kairwan celebrated? What is stated of Tripoli? Mourzouk? Bengazi? What are the length and breadth of Sahara? With what is it interspersed? What is the population of the city of Morocco? Fez? Mequinez? Algiers? Tunis? Tripoli? Kairwan?

Between what degrees of latitude and longitude is Barbary situated? What are its length and breadth? What is the aspect of the country? What is the nature of the climate in the eastern parts? in the southern districts? in Western Barbary? What is the character of the soil in Morocco and Algiers? in Tunis? in Barca? Name some of the vegetable productions. Which of the domestic animals have been long famous? Mention the wild animals. What is a scourge to this country? How many eggs is it said that one female locust lays in the sand? What minerals are found, and where? What is the prevailing religion? What is the character of the people? What is the government? What is the population?

WESTERN AFRICA.

DIVISIONS.—SENEGAM'BIA (comprising the countries on the Senegal, the Gambia, and the Rio Grande); UPPER GUINEA (comprehending Sierra Leone, Grain Coast, and Libe'ria, Ivory Coast, Gold Coast, Slave Coast, Ashantee', Daho'mey, Benin', Old Cala'bar); LOWER GUINEA (comprehending Bia'fra, Loan'go, Con'go, Ango'la, Bengue'la).

GULFS.—Guinea, Benin, Biafra.

RIVERS.—Senegal, Gambia, Rio Grande, Niger or Quorra, Agobay, Congo or Zaire, Coan'za.

PRINCIPAL TOWNS.—In SENEGAMBIA.—Fort St Lou'is 12, and Goree' 5, on islands of the same name, belong-

ing to France; Ba'thurst, a seaport on the island of St Mary, at the mouth of the Gambia, the capital of the British colony of Senegambia.

UPPER GUINEA.—Free'town 13, the capital of the British settlement of Sierra Leone; Monro'via, the capital of Liberia, an independent negro republic, founded in 1848 for free negroes from the United States of America; Cape Coast Castle 10, the capital of the British settlements on the Gold Coast; El Mi'na 10, belonging to the Dutch; Whi'dah 7; Ar'dra 20; Bad'agry 10; Coomas'sie 18, the capital of Ashantee; Abo'mey 30, the capital of Dahomey; Benin 15, the capital of the kingdom of the same name: here the traveller Belzoni died in 1823; Waree' 5; E'boe 6, the seat of a great trade in palm-oil and slaves; Bon'ny 20, with a great trade.

LOWER GUINEA.—Loan'go 20, the capital of the kingdom of the same name; St Sal'vador or Benza Congo, the capital of Congo; St Paul de Loan'do 12, a fortified seaport, the capital of the Portuguese possessions in Western Africa; San Felipe' de Bengue'la.

The general aspect of Western Africa is that of a monotonous flat plain along the coast, with low hills in the distance, which gradually increase in height as they approach the great range of the Kong Mountains. The climate is hotter than in any other portion of the globe, and is in many places very unhealthy. The soil in most parts is exceedingly fertile.

Among the vegetable productions are cocoas, palms, bananas, tamarinds, citrons, pomegranates, the shea or butter-tree, the tallow-tree, and the immense baobab or monkey bread-fruit tree, cotton, indigo, pimento, various kinds of valuable gums, and the usual grains of tropical climates. The chief domestic animals are beeves, buffaloes, sheep, goats, and dogs which do not bark. Among the wild animals may be mentioned elephants, lions, panthers, leopards, monkeys, the gorilla, the chimpanzee, the hippopotamus or river-horse, the giraffe, and the zebra. Chame-

leons, crocodiles, lizards, centipedes, and a variety of snakes, some of them of an enormous size, everywhere abound. Gold is found in the sand of the rivers, and iron is forged in various places.

The people, where they are not Mohammedans, are gross idolaters, fetichism being the prevailing faith. The natives, though savage and revengeful, are brave, patient under misfortune, frugal, and temperate.

In most of the states the government is an absolute despotism.

SOUTHERN AFRICA.

DIVISIONS.—British Possessions (including Cape Colony, Natal, and British Kaffra'ria), Kaffra'ria or Kafferland, the Country of the Hot'tentots, the Country of the Bosh'uanas or Bosh'mans, Trans'vaal Republic, Orange River Free State.

BAYS.—Wal'visch, Santa Cruz, St Hele'na, Saldan'ha, Table, False, St Sebas'tian, Plet'tenberg, St Francis, Algoa, Port Natal, Delago'a.

CAPIES.—Pater'noster, Good Hope, Agul'has, Del'gado or Seal.

RIVERS.—Or'ange or Gariep', Buffalo, Oliphant, Great Fish River, Great Kei River, Tugela.

MOUNTAINS.—Nieuwveld Mountains, Table Mountain.

PRINCIPAL TOWNS.—Cape Town 25, the capital of Cape Colony and of the British settlements in Southern Africa; Graham's Town 6; Pie'termaritzburg, the capital of Natal; Port Natal; King William's Town, the chief town of British Kaffra'ria; Butterworth and Bunting, in Kaffra'ria or Kafferland; Ondonga, Bethany, and Jerusalem, in the country of the Hottentots; Lattakoo', and Kurreecha'nee, in the country of the Boshuanas; Potschef'strom; Bloem'fontein.

The British Possessions of Cape Colony, Natal, and British Kaffraria, with their dependencies, are about 900 miles in length from east to west, with a breadth varying from about 100 to 400 miles; their superficial extent is estimated at 240,000 square miles. The general appearance of the territory is mountainous, rising by successive stages to the high tableland of the interior.

The climate is temperate and salubrious, and the soil is, in some places, so fertile as to produce three crops of Indian corn in the year.

Besides the usual kinds of grain and fruits, indigo, tobacco, cotton, and the tea-plant are reared; and the vine is extensively cultivated. Among the domestic animals not introduced from Europe are the Cape ox, remarkable for his wide branching horns and great limbs; and the Cape sheep, noted for their large and fat tails. The wild animals are nearly the same as those of Western Africa. Gold and copper have been found; coal exists in several places; alum and lead-ore are plentiful; and mineral springs are common.

The population of Cape Colony, Natal, and British Kaffraria is about 750,000.

EASTERN AFRICA.

DIVISIONS.—Sofa'la; Mozambique'; Zanguebar'; A'jan; A'del or Sou'mali.

RIVERS.—Mafu'mo, Sofala, Zambezi or Leeam'bye.

PRINCIPAL TOWNS.—Zimba'o; Ma'nica, a place of considerable trade; Sofala, supposed by some to be the Ophir of Scripture, with exports of gold-dust; Quillima'ne, a seaport near the mouth of the great river Zambezi, with considerable trade; Sen'na; Mozambique 9, a fortified seaport, the capital of the Portuguese settlements on the east coast; Quilo'a, the chief town of a province of the same name, subject to the Imam of Muscat; Momba'za; Melin'da, once a flourishing city, now destroyed by the Gallas; Magadox'a; Berbe'ra,

with a large annual fair; Zei'la, a seaport on an islet near the Straits of Bab-el-mandeb, with considerable trade.

Eastern Africa is situated between 12° N. and 26° S. Lat. Its eastern extremity is 51° 30' E. Long., and it extends indefinitely westward, the seacoast stretching about 3000 miles. So far as is known, this portion of Africa presents an alternation of mountains and extensive plains. The climate is various,—in some parts, pleasant and salubrious, but in the low marshy plains, hot and unhealthy. The soil is likewise various, but in most parts fertile and productive.

The chief vegetable productions are coffee, myrrh, gums, rice, sugar, and ghee. Gold is the chief mineral production, and is found in abundance.

Mohammedanism is professed by considerable numbers, but the great body of the people are idolaters. They are jealous, vindictive, and treacherous.

Little is known with certainty regarding the native governments, but the sovereignty of most part of the coast from Cape Guardafui southward to Cape Delgado is claimed by the Imam of Muscat. The Portuguese have settlements on the coast of Sofala and Mozambique.

CENTRAL AFRICA.

PRINCIPAL DIVISIONS.—Timbuctoo'; Beroo'; Lud'amar; Bon'dou; Kas'son; Kaar'ta; Bambar'ra; Jen'neh; Hous'sa; Bor'goo; Nyf'fee; Yar'riba; Yaou'ri; Manda'ra; Bornou'; Ada'mawa; Ka'nem; Beghar'mi; Ber'goo, Dar-Zaleh, or Wadai; Dar'fûr; Ferbit; Kordofan'; the countries to the south of the equator, on the lakes of Victo'ria-Nyan'za, Albert-Nyan'za, Tanganyika, Nyan'yiza-Nyas'sa, and Shir'wa, and the great river Zambezi and its tributaries.

PRINCIPAL TOWNS.—Timbuctoo 20, a great trading city, first visited by Major Laing in 1826; Wad'let, the

capital of Beroo, with a great trade in salt; Benown', the capital of Ludamar, where Mungo Park the traveller was for a short time kept prisoner; Fattecond'a, the capital of Bondou; Kooniacar'ry, the capital of Kasson; Kem'moo, the capital of Kaarta; Se'go 30, the capital of Bambarra; Jenneh 10, the centre of a great trade; Sackatoo' 80, the capital of Houssa, the most populous town in Central Africa, with considerable trade and manufactures; Ka'no 40, one of the seats of the caravan-trade, and famous for the dyeing of cloth; Zari'a or Zeg-Zeg 30; Ni'ki; Bous'sa 16, the capital of a country of the same name on the river Niger: here Mungo Park was killed by the natives in 1805; Kia'ma 30; Wa'wa 18; Rab'ba 40, a place of great trade, noted for the manufacture of mats; Eg'ga, with an active commerce; Ey'eo or Katun'ga 20, the capital of Yarriba, said to be fifteen miles in circumference; Fun'da 60, on a tributary of the Chadda, with considerable manufactures; Mo'ra; Kou'ka; New Bornou or Bir'nie 10, the residence of a Sultan; Angor'nou 30, a large commercial town; Log'gun; Maou'; Mes'nah, the capital of Begharmi; Wa'ra, the capital of Dar-Zaleh, Wadai, or Bergoo; Cob'bè 6, the capital of Darfûr; Obeid' 30, the capital of Kordofan.

Central Africa is still very imperfectly known. Many parts of it are fertile and thickly peopled, especially on the banks of the rivers Niger or Quorra, the White Nile, the Congo or Zaire, and the Zambezi, Lakes Chad, Victoria-Nyanza (out of which the Nile flows, as discovered by Captains Speke and Grant), Albert-Nyanza, Tanganyika, Nyanyiza-Nyassa, and Shirwa. It seems to be ascertained that there is a high tableland or mountain-range stretching across the continent near the equator.

The climate is generally hot, and dangerous to European constitutions. The soil is for the most part fertile.

The vegetable, animal, and mineral productions are mostly similar to those of Western Africa.

Mohammedanism is professed throughout a large part of the

country, but the greater number of the natives are idolaters. The people are sanguinary, turbulent, and deceitful.

The governments are despotic.

EXERCISES.—Point out the divisions of Western Africa. Which is the most westerly division? What countries does it include? What does Upper Guinea comprehend? Name the divisions of Lower Guinea. Where is the Gulf of Guinea? In what direction do the Senegal and Gambia flow, and into what do they fall? Into what does the Niger flow? the Congo? Name the principal towns in Senegambia. Of what is Freetown the capital? What is stated of Monrovia? To whom does El Mina belong? What is stated of Coomassie? Eboe? St Paul de Loando? Name the divisions of Southern Africa. Where are Saldanha, Table, and False Bays? Where is the Cape of Good Hope? Agulhas? In what direction do the Orange and Oliphant flow? Name the British Possessions in Southern Africa. What is their capital? Where is Port Natal? What is the population of Freetown? Coomassie? Abomey? Benin? Loango? Cape Town?

Name and point out the divisions of Eastern Africa. Of what divisions is the Zambezi the boundary? What is stated of Sofala? Mozambique? Berbera? Point out the divisions of Central Africa. What is stated of Timbuctoo? of Walet? Jenneh? Sackatoo? Kano? Eyo? Funda? New Bornou? Where was Park the traveller for a short time kept prisoner? Where was he killed? What is the population of Timbuctoo? Sego? Sackatoo? Kano? Zaria? Kiama? Funda? Angornou?

What is the general aspect of Western Africa? What is the nature of the climate and soil? Name some of the vegetables. What are the chief domestic animals? Mention some of the wild animals. Name some of the reptiles. What minerals are found? What is the prevailing faith? What is the character of the natives? What is the government in most of the states?

What are the length, breadth, and superficial extent of the British Possessions in Southern Africa? What is the general appearance of the territory? What is the nature of the climate and soil? Name some of the vegetable productions. What are the domestic animals? What minerals have been found? What is the population?

Between what degrees of latitude is Eastern Africa situated? In what longitude is its eastern extremity? How far does it stretch along the seacoast? What is the appearance of this portion of Africa? What is the nature of the climate? of the soil? Name the chief vegetable productions. What is the chief mineral production? What religion is professed by considerable numbers? What are the great body of the people? What is their character? What are the governments?

What is known of Central Africa? What parts of it are fertile and thickly peopled? What stretches across the continent near the equator? What is the nature of the climate and soil? What religion is professed throughout a large part of the country? What is the creed of a majority of the natives? What is the character of the people?

ABYSSINIA

Is bounded on the N. by Nubia; W. by Nubia and Central Africa; S. by the country of the Gallas; E. by Adel or Soumali, the Strait of Bab-el-mandeb, and the Red Sea.

RIVERS.—Bahr-el-Az'rek or Blue River, and the Atbara or Tacaz'ze, affluents of the Nile.

LAKE.—Dembea or Tzana.

PRINCIPAL TOWNS.—Gon'dar 6, the capital of Amha'ra, the central state of Abyssinia; An'kobar 12, the capital of the state of Sho'a; Adow'a 8, the largest town in the state of Tigre'; Mas'suah, a seaport on the Red Sea, with considerable trade; Ax'um, once the capital of Abyssinia, with a Christian church.

Abyssinia is situated between 7° and 16° N. Lat., and between 33° and 45° E. Long. Its length from north to south is about 630 miles; its breadth from west to east, 550 miles; its superficial extent, about 245,000 square miles. It is a high tableland interspersed with mountains, which everywhere shoot up in sharp peaks.

The climate is generally temperate and healthy, but in the valleys the heat and the exhalations of stagnant water occasion many fatal diseases. The soil is various, but in the valleys is generally fertile.

The chief vegetable productions are millet, barley, wheat, maize, teff, myrrh, and coffee; vines are cultivated, and papyrus is found in the marshes. Among the wild animals may be mentioned the two-horned rhinoceros, the hyena, the wild-boar the gazelle, the zebra, the hippopotamus, the crocodile, the lion, and serpents of enormous size. The domestic cattle are large, and have horns of very great length; the horse is small and lively, and the ass and the mule supply the place of the camel. The mineral productions are gold, silver, copper, iron, lead, sulphur, and salt.

The prevailing religion is a corrupt form of Christianity, and

the people are in a low state of civilisation. The country is divided into a number of petty kingdoms, each governed by a despotic chief.

In consequence of a number of Englishmen being detained as prisoners by a chief styling himself the Emperor Theodore, Britain, towards the close of 1867, sent an armed force to Abyssinia to effect their release. After an arduous march of 400 miles inland, the object of the expedition was safely and successfully accomplished.

The population is about 4,500,000.

NUBIA

Is bounded on the N. by Egypt; W. by Central Africa, S. by Abyssinia; E. by the Red Sea.

DIVISIONS.—Nubia Proper, Dongo'la, Senna'ar.

RIVER.—Nile, with its tributaries.

PRINCIPAL TOWNS.—Derr; Dongolo 6; Shen'dy 10, the entrepôt of the trade of Central Africa with Egypt and Arabia; Sennaar 9; Kar'toum 25, the seat of government; Soua'kin 8, the only seaport of Nubia, with a considerable commerce.

EGYPT

Is bounded on the N. by the Mediterranean; W. by Barca and the Desert of Lib'ya; S. by Nubia; E. by the Red Sea and the Isthmus of Suez.

DIVISIONS.—Lower Egypt, Baha'ri, or the Del'ta; Middle Egypt or Vosta'ni; Upper Egypt or Said.

RIVER.—Nile.

LAKES.—Mareo'tis, Maudie, Etko, Bourlos, Menzalah, Birket-el-keroun.

PRINCIPAL TOWNS.—Cai'ro or Grand Cairo 250, the capital of Egypt, near which are the celebrated Pyramids; Alexan'dria 150, founded by Alexander the

Great, with an extensive commerce: among other remarkable antiquities here, are Pompey's Pillar and the obelisk called Cleopatra's Needle; in the neighbourhood of this city the French army was defeated by the British, under General Abercromby, 21st March 1801; Roset'ta, where, in 1799, was found an engraved slab which led to the discovery of a key to the interpretation of the Egyptian hieroglyphics; Damiet'ta 28; Suez, from which to Port Said, on the Mediterranean, a canal was opened in 1869; Medinet 6, on the site of the ancient Arsinoë; Benisouef; Es-Siout' 25; Gir'geh 7, once the capital of Upper Egypt; Ken'neh or Ghen'neh, famous for its manufacture of pottery; Assou'an (*Sye'ne*), near which are quarries whence the ancient Egyptians procured the granite used in building their temples.

Nubia and Egypt are situated between 11° and 32° N. Lat., and between 23° 20' and 38° 20' E. Long.; their greatest length being about 1450 miles, and their average breadth about 650 miles. The greater part of Nubia consists of dreary flat deserts, interspersed with low hills and narrow valleys, through which the Nile and its tributaries flow. Egypt, with the exception of the banks of the Nile, is also a low sandy desert, broken only by the hills, which lie along each side of the valley.

The climate of Nubia is perhaps the driest on the globe, and is intolerably hot; that of Egypt is also excessively warm, but is tempered by refreshing northerly breezes. The soil along the banks of the rivers is exceedingly fertile and productive; in most other parts it is sandy and barren.

The principal vegetable productions are durra, bammia, wheat, and other grains, tobacco, sugar-cane, indigo, cotton, silk, flax, olives, dates, figs, vines, and all the common kinds of fruit. The lotus and papyrus are natives of Egypt. The wild animals are similar to those in most other parts of Africa. The domestic animals are asses of an excellent breed, mules, camels, a fine race of beautiful horses, sheep, and buffaloes.

The prevalent religion of Egypt is Mohammedanism; but about a twelfth part of the people are Copts, who profess Christianity. The religion of Nubia is partly Mohammedanism, partly

idolatry. Some attention has been lately devoted to education in Egypt; primary, secondary, and special schools, through the whole of which pupils are compelled to pass, have been established upon a uniform system. The natives are servile, timid, dissimulating, and superstitious.

The government of Egypt is a military despotism, hereditary in the family of Mohammed Ali, under the supremacy of the Ottoman Porte.

The population of Egypt in 1859 was estimated at 5,125,000; of Nubia at 400,000.

EXERCISES.—How is Abyssinia bounded? Name and point out its lakes. Name its rivers. What is its capital? What is stated of Adowa? Massuah? Axum? What is the population of Gondar? Adowa? Antalo?

How is Nubia bounded? What are its divisions? What river flows through it? What is stated of Shendy? Kartoum? Souakin? On what river is Dongola? What is the population of Kartoum? Souakin? Dongola?

What are the boundaries of Egypt? Name its divisions. What river flows through it? What is its capital? What remarkable erections are near it? How is Alexandria situated? What is stated of it? What occurred in its neighbourhood, and when? What was discovered at Rosetta in 1799? What is said regarding Suez? For what is Kenneh famous? What is the population of Grand Cairo? Alexandria? Rosetta? Damietta?

Between what degrees of latitude and longitude is Abyssinia situated? What are its length and breadth? What is the aspect of the country? What is the nature of the climate? of the soil? What are the chief vegetable productions? Mention some of the wild animals. What is stated of the domestic cattle? of the horse, etc? Enumerate the mineral productions. What is the religion? In what state are the people? What is the government? What is the population?

Between what degrees of latitude and longitude are Nubia and Egypt situated? What are their length and breadth? Of what does the greater part of Nubia consist? What is the nature of its climate? What kind of climate has Egypt? What is the nature of the soil of Nubia and Egypt? Mention some of the vegetable productions. What two plants are natives of Egypt? What are the domestic animals? What is the prevalent religion of Egypt? What religions prevail in Nubia? In what state is education? What is the character of the natives? What is the government of Egypt? What is its population?

AFRICAN ISLANDS.

MADEIRAS: principal, Madeira, noted for its fine climate and its wine,—chief town, Fun'chal 30; and Por'to San'to.—**CANARIES**: the principal of which are Teneriffe',—chief towns, San'ta Cruz 11, Lagu'na 7, Orotava 8; Grand Canary,—chief town, Pal'mas 17; Fuer'teventu'ra; Lancero'ta; Pal'ma; Fer'ro, formerly the first meridian of European geographers.—**CAPE VERDE ISLANDS**, the principal of which are St Ja'go, in which is Por'to Pra'ya, the residence of the governor; St Nicholas; Boavis'ta; Fo'go. — Fernan'do Po; Princes Island; St Thomas; Ascension, frequented by ships for water, etc.; St Hele'na, where Napoleon Bonaparte died, 5th May 1821, after a captivity of nearly six years,—chief town, Jamestown; Tris'tan d'Aeun'ha; Prince Edward's Isles; Cro'zet's Isles; Kerguelen's Land; Amsterdam; St Paul; Madagas'car,—chief towns, Tananari'vo 25, Tamata've, and Port Dau'phin; Reun'ion, formerly Bourbon',—chief towns, St Den'is 8, and St Paul 10; Mauri'tius or Isle of France,—chief town, Port Louis 75; Com'oro Isles; Zanzibar', with a town of the same name; Pem'ba; Amiran'tè Isles; Seychel'les Isles, of which Mahé is the principal; Soco'tra, noted for its aloes and dragon's blood,—chief town, Tamari'da.

EXERCISES.—In what ocean are the Madeiras situated? What are the chief of them? For what is Madeira noted? What is its chief town? What is stated of Ferro? What is the chief town in Grand Canary? Where is the residence of the governor of the Cape Verde Islands? What is stated of Ascension? of St Helena? What is its chief town? Where is Madagascar? Name its chief towns, and tell where they are situated. What are the chief towns in Reunion? For what is Socotra noted? What is its chief town? What is the chief town in the Mauritius? What is the population of Port Louis? Funchal? Palmas? St Denis?

NORTH AMERICA.

FOR THE GENERAL DIVISIONS OF NORTH AMERICA,
see page 16.

THE BRITISH POSSESSIONS

Are bounded on the N. by Baffin's Bay and the Arctic Ocean; W. by Alaska and the Pacific Ocean; S. by the United States; E. by the Atlantic Ocean.

DIVISIONS.—Dominion of Canada (comprising Quebec, formerly known as Lower Canada; Ontario, formerly Upper Canada; New Brunswick; Nova Scotia, including Cape Breton Island; the North-West Territory (formerly belonging to the Hudson's Bay Company); Prince Edward Island; Newfoundland and Labrador; British Columbia and Vancouver Island; Bermuda's.

BAYS AND GULFS.—Fundy, St Lawrence; Hudson's, James', Baffin's, Prince Regent's Inlet, Gulf of Boothia, Melville Sound, Prince Albert Sound, Coronation; Queen Charlotte's Sound, Gulf of Georgia.

ISLANDS.—Newfoundland; Cape Breton; Prince Edward Island; Bermudas; Anticosti; Southampton; Arctic Archipelago, North Georgian or Parry's Isles,—principal, Melville Island, where Captain Parry wintered in 1819-20.

STRAITS.—Gut of Canso, Belleisle', Hudson's, Davis', Barrow's, Dease.

PENINSULAS.—Nova Scotia, Melville, Boothia Felix.

CAPIES.—Sable, Canso, Breton, Ray, Race, Charles, Chidley, Bathurst.

MOUNTAINS.—Rocky Mountains.

RIVERS.—St Lawrence, Niagara, Ottawa, St John,

Albany, Severn, Nelson, Churchill, Coppermine, Mackenzie, Back, Frazer.

LAKES.—Superior, Huron, Erie, Ontario, Winnipeg, Deer Lake, Athabasca, Slave Lake, Great Bear Lake, Mistás'sin.

PRINCIPAL TOWNS.—In NOVA SCOTIA.—Halifax 25, the principal naval station of British America; Annapolis; Pictou', with a good harbour.

CAPE BRETON.—Sydney.

PRINCE EDWARD ISLAND.—Charlotte Town 7.

NEWFOUNDLAND AND LABRADOR.—St John 27, capital of Newfoundland. Nain, Hope'dale, and He'bron, are stations of the Moravian missionaries on the east coast of Labrador.

NEW BRUNSWICK.—Fred'erickton 6; St John 21; St Andrew's 5.

CANADA.—Ottawa, formerly By'town, 15, now the seat of government; Quebec' 60, a strongly fortified city, with an extensive trade: it was taken from the French in 1759 by the British, commanded by General Wolfe, who was slain in the action; Montreal' 120, on an island of the same name in the St Lawrence, a town of great commercial importance; Three Rivers 7; Sorel' or William-Henry; Kings'ton 14, a naval station on Lake Ontario; Brock'ville 5; Perth; Toron'to 50, with an excellent harbour and good trade; Ham'ilton 20; Niag'ara, with an active trade; London 16; Gode'rich.

NORTH-WEST TERRITORY.—York Fort, Churchill Fort, Severn Fort, Albany Fort, Moose Fort, East Main Fort, are settlements of the Hudson's Bay Company.

BRITISH COLUMBIA.—New Westminster, on the Frazer River.

VANCOUVER ISLAND.—Victoria.

BERMUDAS.—St George.

The British Possessions are situated between 42° and 72° N. Lat., and between 52° 43' and 141° W. Long. Their greatest length from east to west is about 3000 miles; their greatest breadth from north to south, about 2000 miles. The face of the country is extremely diversified; ridges of high hills extend from the coast into the interior, and between these lie extensive valleys.

The climate embraces the extremes of heat and cold. The soil, especially in Upper Canada, is fertile, and well adapted for almost every species of produce. Besides the usual kinds of grain, tobacco, hemp, and flax are successfully cultivated; all the fruits and vegetables of Britain are abundant, and in the south-west, grapes, peaches, and nectarines arrive at perfection. The greater portion of Canada, however, is still covered with forests. The domestic animals are similar to those of Europe; the chief wild animals are the American elk, fallow-deer, bear, beaver, buffalo, roebuck, etc. The principal minerals are coal, iron, lead, copper, salt, sulphur, alum, gypsum, and lime.

Episcopacy is the predominant religion; the French colonists and Irish emigrants are nearly all Roman-catholics; the emigrants from Scotland belong chiefly to the Presbyterian church. The means of education are in a flourishing condition. There are numerous elementary schools, besides grammar-schools, colleges, and universities.

The executive government of each colony is vested in a governor appointed by the Crown; the legislative power is exercised by a representative assembly.

The population is about 3,375,000.

EXERCISES.—How are the British Possessions in North America bounded? Name and point out the divisions. Which is the most southerly? What division lies to the south-east of New Brunswick? Where is Fundy Bay? Baffin's? James'? Franklin? the Gulf of St Lawrence? Hudson's Bay? Where is Newfoundland situated? Name its chief town. What is the chief town of Cape Breton? of Prince Edward Island? of Bermudas? What is the principal of the Parry Isles? Who wintered there, and when? Where are the Straits of Belleisle? Barrow's? Hudson's? Davis'? Where is Cape Sable? Race? Chidley? Ray? Charles? Where are the Rocky Mountains? Out of what lake does the St Lawrence flow, and in what direction does it run? Where is the Frazer River? In what direction does the Coppermine flow? Into what do the Severn, Nelson, and Churchill flow? the Albany? the Ottawa?

Name the lakes which are between Canada and the United States. Which is the most easterly? the most westerly? Where is Lake

Mistassin? Point out Lakes Winnipeg, Athabasca, Slave, and Great Bear. Name the principal towns in Nova Scotia. What is stated of Halifax? Where have the Moravian missionaries settlements? What are the towns in New Brunswick? On what river is Fredericton? On what river is Quebec? What is stated of it? How is Montreal situated, and what is said of it? Where is the naval station on Lake Ontario? On what lake is Toronto situated? What is stated of it? Where is Goderich? Name the settlements of the Hudson's Bay Company.

Between what degrees of latitude and longitude are the British Possessions situated? What are their length and breadth? What is the aspect of the country? What is the nature of the climate and soil? Mention some of the vegetable productions. What fruits arrive at perfection in the south-west? With what is the greater portion of Canada still covered? What are the chief wild animals? Enumerate some of the principal minerals. What is the predominant religion? Of what religion are the French colonists? To what Church do those from Scotland chiefly belong? In whom is the executive government of each colony vested? By what body is the legislative power exercised? What is the population of British America?

DANISH AMERICA OR GREENLAND

Is bounded on the E. by the Arctic Ocean; W. by Davis' Straits, Baffin's Bay, Smith Sound, and Kennedy Channel; S. by the Atlantic. Its northern boundary has not been explored, but is supposed to be the Arctic Ocean. Its superficial extent is estimated at about 380,000 square miles. Its population in 1860 was 9892. The chief villages are Ju'lianshaab, Chris'tianshaab, Uppernavik, Fred'erickschaab, and Good Hope.

This inhospitable region may be said to consist of rocks, ice, and snow; but in the southern parts small junipers, willows, and birches are found, and corn and potatoes are raised to a slight extent. The animals embrace rein-deer, bears, dogs, foxes, hares; and the shores are frequented by the walrus and five kinds of seals. Birds are tolerably numerous, as are also fish. More than ninety species of insects have been discovered.

In Greenland it snows in almost every month of the year except July. The short summer is comparatively warm, but foggy. The gloom of the long and severe winter is diversified by the northern lights.

The natives are short in stature, with long black hair, small eyes, and flat faces.

EXERCISES.—By what other name is Danish America known? How is it bounded? What is its superficial extent? What is the number of its population? Name the chief villages. Describe the character of the country. Mention the animals that are found in Greenland. How many species of insects have been discovered there? What is stated regarding the natives?

THE UNITED STATES OF AMERICA

Are bounded on the N. by British America; W. by the Pacific Ocean; S. by Mexico and the Gulf of Mexico; E. by the Atlantic Ocean.

STATES.—Maine, New Hamp'shire, Ver'mont, Massachusetts, Rhode Island, Conne'cticut, New York, New Jer'sey, Pennsylv'nia, Del'aware, Ma'ryland, District of Colum'bia, East Virgin'ia, West Virgin'ia, North Caroli'na, South Caroli'na, Georg'ia, Oh'i'o, India'na, Mi'chigan, Illinois', Missou'ri, Kentuck'y, Ten'nessee, Alaba'ma, Mississip'pi, Louisia'na, Tex'as, Arkan'sas, Flor'ida, Io'wa, Wiscon'sin, Californ'ia, Minneso'ta, Ore'gon, Kan'sas, Neva'da, Nebras'ka, and Colora'do.

TERRITORIES not yet erected into States.—Alias'ka (formerly known as Russian America), U'tah, New Mex'ico, Wash'ington, Dako'ta, Arizo'na, Ida'ho, Monta'na, and Wyo'ming.

BAYS AND GULFS.—Penob'scot, Cas'co, Barn'staple or Massachusetts, Long Island Sound, Delaware, Ches'-apeake, Gulfs of Florida and Mexico; Mon'terey, San

Francis'co, Hum'boldt, Columbia, Shoalwater, Gray's Harbour, Admiralty Inlet, Hood's Canal.

ISLANDS.—Nantuck'et, Martha's Vineyard, Rhode, Long, Staten.

PENINSULA.—Florida.

CAVES.—Ann, Cod, May, Charles, Henry, Hat'teras, Lookout, Fear, Tan'cha or Sable; Mendoci'no, Blanco.

MOUNTAINS.—Appala'chian or Al'leghany; Rocky Mountains; Sierra Neva'da; Cascade Range.

RIVERS.—Mississippi, with its tributaries St Peter, Missouri, Arkansas, Red River, Wisconsin, Illinois, and Ohio, with its affluents Wabash', Cumberland, and Tennessee; Alabama; Tombec'bee; Savan'nah; Santee; James; Poto'mac; Susquehan'na; Delaware; Hudson; Connecticut; St Croix'; Columbia or Oregon; Sacramen'to; Ri'o Bra'vo del Nor'te; Rio Colora'do.

LAKES.—Michigan, Champlain', Pontchar'train, the southern shores of the Canadian Lakes; Great Salt Lake.

PRINCIPAL TOWNS.—In MAINE.—Augus'ta 8; Portland 26, with a considerable trade; Bangor 16; Belfast 5.

NEW HAMPSHIRE.—Con'cord 9; Portsmouth 10, a strongly-fortified town, and one of the naval stations of the United States; Dover 8.

VERMONT.—Montpell'ier; Burl'ington 8, with a university; Windsor; Mid'dlebury, the seat of a college.

MASSACHUSETTS.—Bos'ton 180, with a good harbour, and extensive commerce, the birthplace of Franklin; Sa'lem 22, with flourishing commerce; Cambridge 26, the seat of Harvard University, the best endowed in the United States; Low'ell 37, the most noted town in the Union for its manufactures of wool and cotton; Nantuck'et 6, in an island of the same name: its inhabitants are noted for their enterprise and success in the southern whale-fishery; Springfield 15, with thriving manufactures.

RHODE ISLAND.—Provi'dence 51, with a good trade and

numerous manufactures; New'port 11, on a small island called Rhode Island, much resorted to for sea-bathing.

CONNECTICUT.—Hart'ford 29, the seat of Washington College; New'haven 39, the principal seaport of the state, and the seat of Yale College; New London 10, with a flourishing commerce.

NEW YORK.—Al'bany 62, with great trade and manufactures; New York 806, the largest and most commercial city in the United States; Bu'falo 81, the chief seat of the lake trade; Sarato'ga, a celebrated watering-place: here, in 1777, a British army, under General Burgoyne, capitulated to the Americans, under General Gates; Hudson 7, with an extensive trade; Brook'lyn 267, on Long Island, near which the British defeated the Americans with great loss in 1776; Rochester 48, noted for its flour, carpet, and other manufactures.

NEW JERSEY.—Trenton 20; New'ark 72; and Pat'erson 20, with extensive manufactures; Burlington 5.

PENNSYLVANIA.—Har'risburg 13; Philadel'phia 563, the third maritime city of the United States, founded in 1682 by the famous William Penn: it has a flourishing university and many benevolent, literary, and scientific institutions; Pitts'burg 49, with extensive manufactures of cotton, wool, glass, and iron; Lancaster 18.

DELAWARE.—Dover; Wil'mington 22, with a thriving trade; Newcastle.

MARYLAND.—Annap'olis 5; Bal'timore 212, with a fine harbour and an extensive commerce.

DISTRICT OF COLUMBIA.—Wash'ington 61, the capital of the United States, and the seat of the federal government and legislature; George'town 9.

EAST VIRGINIA.—Rich'mond 38, with a great trade; Norfolk 16, one of the principal naval stations of the Union; Petersburg 18, with thriving manufactures; *Alexandria* 13.

WEST VIRGINIA.—Wheel'ing 18, with an extensive trade and numerous manufactures.

NORTH CAROLINA.—Ra'leigh 5, so called in honour of the famous Sir Walter Raleigh; Newbern' 5, Fayette'ville 5; Wilmington 10, a thriving seaport.

SOUTH CAROLINA.—Colum'bia 8; Charles'ton 41, a large seaport, with a flourishing trade; Georgetown.

GEORGIA.—Mil'ledgeville; Savan'nah 22; Augus'ta 12, with a good trade in cotton.

OHIO.—Colum'bus 19; Cincinna'ti 161, with extensive trade and manufactures; Cleve'land 43; Day'ton 20.

INDIANA.—Indianap'olis 19; Vincennes'; New Albany 13.

MICHIGAN.—Lan'sing; Detroit' 46; Monroe'.

ILLINOIS.—Springfield 5; Vanda'lia; Kaskas'kia; Chica'go 109; Quin'cy 14; Al'ton 7; Gale'na 8; Peo'ria 14.

MISSOURI.—Jefferson; St Lou'is 161, the centre of an extensive trade; St Charles; Frank'lin.

KENTUCKY.—Frank'fort; Lou'isville 68, with extensive trade and manufactures; Lex'ington 9.

TENNESSEE.—Nash'ville 17, with a great trade; Knox'ville 10; Mem'phis 23.

ALABAMA.—Montgomery 36; Tuscaloo'sa; Cahaw'-ba; Mobile' 29, with a flourishing trade in cotton; St Stephen's 12.

MISSISSIPPI.—Jack'son 6; Natch'ez 7, with a great trade; Columbus.

LOUISIANA.—Ba'ton Rouge 6; New Or'leans 169; with a great foreign and inland trade; Alexandria; Monroe.

TEXAS.—Aus'tin; Hous'ton 6, the centre of a great trade; Nacogdoch'es; Gal'veston 7, on an island of the same name.

ARKANSAS.—Little Rock or Arkop'olis; Arkansas.

FLORIDA.—Tallahas'see; Pensaco'la; St Augus'tine.

IOWA.—Des Moines; Burlington 7; Davenport 11, Dubuque 13.

WISCONSIN.—Mad'ison 8; Milwau'kie 45; Racine 12.

CALIFORNIA.—Sacramen'to 24; San Jose'; San Francis'co 59, a city which has risen into great importance since the discovery of gold-mines in its neighbourhood; Benicia; Mon'terey.

MINNESOTA.—St Paul 10.

OREGON.—Sa'lem; Asto'ria.

KANSAS.—Frankfort.

NEVADA.—Car'son City.

NEBRASKA.—Lincoln.

COLORADO.—Golden City, Den'ver.

PRINCIPAL TOWNS in TERRITORIES :—

UTAH.—Fill'more City; Great Salt Lake City 15, the chief seat of the Mormons.

ALASKA.—New Archangel, on Sitka Island.

NEW MEXICO.—Santa Fe 7.

WASHINGTON.—Olym'pia.

DAKOTA.—Yank'ton.

IDAHO.—Florence.

ARIZONA.—Prescott.

MONTANA.—Virginia City.

The United States (exclusive of Aliaska) are situated between 25° and 49° N. Lat., and between 67° and 125° W. Long. Their greatest length is about 2700 miles; their greatest breadth, 1600 miles; their superficial extent, 3,306,834 square miles. The country is intersected by three immense ranges of mountains, between which are extensive tracts of level land.

The climate is varied and changeable. The soil, with the exception of the more mountainous parts, is extremely fertile.

Besides the ordinary kinds of grain, flax, hemp, rice, maize, tobacco, cotton, indigo, sugar, and vines are successfully cultivated. The domestic animals are similar to those of Europe, whence they have been imported; the chief wild animals are the buffalo, moose and rein deer, the elk, the bear, the wolf, the spotted tiger, and the cougar or panther. The birds are celebrated for their beautiful plumage. In the prairies are numerous serpents, of which the rattlesnake is the most formidable.

The more valuable and abundant of the mineral productions are gold, iron, lead, coal, and salt.

There is no state religion or established church; but the great bulk of the people profess Christianity. The clergy are dependent upon the voluntary contributions of their hearers. Elementary education is carefully attended to; free schools, high schools, gymnasiums, and colleges are numerous. The inhabitants are acute, enterprising, brave, high-spirited, but boastful, vain, and inquisitive.

The government is a federal republic, the executive power being vested in a President, who holds office for four years, and the legislative power in a Congress, consisting of a senate and a house of representatives. Each State has a similar government for the regulation of its internal affairs.

The population in 1860 was 31,445,080, of whom 3,953,160 were slaves. In 1860-61, eleven of the slave-holding States attempted to separate from the Union; but after a disastrous civil war of four years' duration, they were forced to succumb. Slavery has been abolished throughout the Union.

EXERCISES.—What are the boundaries of the United States? Point out the different States. Name the State in the north-east. What States border on New York on the east? on the south? What States are north of Massachusetts? What are south of it? What are west of Virginia? Name the States north of Kentucky,—those south of Tennessee,—those which have the Mississippi on the west,—those which have the Mississippi on the east. Name the States which border on the Atlantic, beginning on the north. Name those which border on the Gulf of Mexico. Where is the State of Wisconsin situated? Where is Florida? What is the number of the States? Name the Confederate States. Where is Iowa? Where are the Gulfs of Florida? of Mexico? Penobscot and Casco Bays? San Francisco? Barnstable? Delaware? Chesapeake? Long Island Sound? Albemarle and Pamlico Sounds? Where is Rhode Island? Long? Staten? Martha's Vineyard? Nantucket? Where are Capes Tancha or Sable? Ann? Hatteras? Lookout? Fear? Cod? Henry? Charles? May? Where are the Appalachian or Alleghany Mountains? the Sierra Nevada? the Rocky Mountains? Cascade Range?

In what direction, and into what does the Mississippi flow? Name its tributaries. What are the affluents of the Ohio? In what direction does the Missouri flow? Ohio? Red River? Savannah? Of what State does the Savannah form the boundary? Through what State does the Hudson flow, and into what does it fall? Of what States does the Potomac form the boundary? In what direction does the Alabama flow, and into what does it fall?

Between what States does the Connecticut flow? Of what States is the Delaware the boundary? In what direction does the Columbia

or Oregon flow, and into what does it fall? In what direction does the Sacramento flow, and into what does it fall? In what direction does the Rio Colorado flow, and into what does it fall? Where is Lake Champlain? Pontchartrain? Michigan? In what State, and on what river is Augusta? Windsor? Hartford? Albany? Trenton? Philadelphia? Washington? Richmond? Columbia? Savannah? Cincinnati? Vincennes? St Louis? Louisville? Nashville? Mobile? Natchez? New Orleans? Little Rock or Arkopolis? Pittsburg? What is the capital of the United States? In what State is Boston, and what is stated of it? Which is the largest and most commercial city in the United States? What is stated of Philadelphia? New Orleans? Portsmouth? Lowell? Nantucket? Newport? Pittsburg? Baltimore? Norfolk? Raleigh? Buffalo? Mobile? Saratoga? Brooklyn? Which is the best endowed university in the United States? Where is it situated? What town is the seat of Washington College? of Yale College? What is the population of New York? Philadelphia? New Orleans? Baltimore? Boston? Pittsburg? Charleston? Washington? Louisville? Name the towns in Florida, in Iowa, in Wisconsin. Name the towns in Texas. Name those in California. How is Galveston situated? What is stated of San Francisco? What is the population of Milwaukee? of Great Salt Lake City? of Santa Fé? Where is Oregon situated? What river flows through it?

Between what degrees of latitude and longitude are the United States situated? What are their length, breadth, and superficial extent? By what is the country intersected? What is the nature of the climate and soil? Mention some of the vegetable productions. What is said of the domestic animals? Name the chief wild animals. For what are the birds celebrated? What are numerous in the prairies? Which is the most formidable of the serpent tribe? Enumerate the mineral productions. What religion does the great bulk of the people profess? Is there any established church? In what state is elementary education? What educational establishments are numerous? What is the character of the inhabitants? What is the government? In whom is the executive power vested? How long does the President hold office? Where is the legislative power vested? What is the government of each State? What was the population of the United States in 1860? Of this number how many were slaves? What is said about the slave-holding States?

MEXICO

Is bounded on the N. by the United States; W. by the Pacific Ocean; S. by the Pacific and Central America; E. by the United States of America and the *Gulf of Mexico*.

Mexico is divided into fifty departments.

GULFS.—Mexico; Bay of Campeach'y; California.

CAPIES.—Catoche', St Lucas, Corrien'tes.

MOUNTAINS.—Popocat'epetl or the Mountain of Smoke, Oriza'ba, Jorul'lo.

RIVERS.—Rio Grande del Norte, Rio Grande de Santiago, Culia'can.

LAKES.—Chapa'la, Tezcu'co, Pascua'ro.

PRINCIPAL TOWNS.—Mexico 200, the capital, one of the finest cities in America; Acapul'co; Quereta'ro 48, with manufactures of cloth and leather; Valladolid; Guanaxua'to 63, near which are very rich silver-mines; Zacate'cas 16, in the centre of silver-mines; Cinalo'a 9; Aris'pe 5; Guadaluza'ra 70, the second city in Mexico; Duran'go 14, infested by scorpions; Chihuahua 12, in the vicinity of gold, silver, and copper mines; Monclo'va; Monterey 14, San Lu'is Poto'si 34; Ve'ra Cruz 10, the principal seaport of Mexico; Xa'lapa or Ja'lapa 12, which gives name to the medicinal root *jalap*; Oaxa'ca 25: in its neighbourhood are great numbers of cochineal insects; Puebla 75, with glass and hardware manufactures; Mer'ida 24; Matamo'ras 15, an important seaport.

Mexico is situated between 15° 45' and 32° 45' N. Lat., and between 87° and 117° W. Long. Its greatest length exceeds 1800 miles; its breadth varies from 130 to 1300 miles; its superficial extent has been estimated at 833,000 square miles.

The face of the country is exceedingly diversified, the central portion being an extensive plateau or tableland at an elevation of from 6000 to 8000 feet, from which several volcanic peaks tower to the height of 17,000 or 18,000 feet above the level of the sea.

The climate in the more elevated parts is mild and genial, in the low plains it is excessively hot and unhealthy. The soil is exceedingly fertile.

The *vegetable* productions include almost every species found

in temperate and tropical climates, while the higher mountains are clothed with the vegetation of the north of Europe. Immense herds of cattle and sheep, both tame and wild, are fed in the northern prairies: the stag, the jaguar, the cougar, and the tapir, are the more remarkable among the wild animals. The country has long been noted for its mineral wealth; the gold and silver mines formerly produced about five millions sterling a-year. Copper, iron, lead, tin, sulphur, etc., are found in abundance.

The established religion is the Roman-catholic. Owing to the unsettled state of the country since the revolution in 1821, education has been very much neglected. The people are indolent and unenterprising.

The government of Mexico is a federal republic, similar to that of the United States.

The population is 8,567,000.

CENTRAL AMERICA

Is bounded on the N. by Mexico and the Bay of Honduras; W. by Mexico and the Pacific; S. by the Pacific; E. by New Granada and the Caribbean Sea.

The country to which the name of Central America is generally given consists of five independent States and one British colony. The independent States are Guatemala, San Salvador, Honduras, Nicaragua, and Costa Rica. The colony is British Honduras.

GULFS.—Honduras; Mosquito, Dulce, Nicoya, Fonseca.

CAVES.—Honduras, Camaran, Gra'cias à Di'os, Blanco.

LAKES.—Nicarag'ua, Le'on or Managua.

PRINCIPAL TOWNS.—New Guatemala 40; San Salvador 30, with an extensive trade in indigo; Comaya'gua 18, Managua 10, Leon 35; Nicarag'ua 15; San Jose'

30; Belize'5, in British Honduras, with large exports of mahogany and logwood.

Central America is situated between 8° and $18^{\circ} 30'$ N. Lat., and between $81^{\circ} 30'$ and $93^{\circ} 20'$ W. Long. Its greatest length is about 1000 miles; its breadth, from 70 to 350 miles; its superficial extent, 191,000 square miles. The country is mountainous.

The climate in the interior is temperate and agreeable, but on the coasts extremely hot and unhealthy. The vegetable, animal, and mineral productions are similar to those of Mexico.

The established religion in all the States is Roman-catholic.

Each State is an independent republic.

The population is about 2,500,000.

EXERCISES.—In what direction does the Rio Grande del Norte flow, and into what does it fall? What are the boundaries of Mexico? How many States, etc., does it contain? Whether is Lake Chapala or Lake Tezcuco the more westerly? Where is the Bay of Campeachy? Cape Catoche? What is the capital of Mexico? What is said of it? What is the principal seaport of Mexico? By what is Durango infested? Which is the second city in Mexico? What is stated of Queretaro? Guanajuato? Xalapa or Jalapa? Oaxaca? Puebla?

What are the boundaries of the country called Central America? Of what number of independent states does it consist? What British colony is reckoned a part of Central America? What is its chief town? Where is Cape Gracias à Dios? Lake Nicaragua? What is the population of the city of Mexico? of Oaxaca? Puebla? New Guatemala? San Salvador? Guadalajara?

Between what degrees of latitude and longitude is Mexico situated? What are its length, breadth, and superficial extent? What is the appearance of the country? To what height do several volcanic peaks rise? What is the nature of the climate and soil? What are the vegetable productions of Mexico? Name the more remarkable wild animals? For what has this country long been noted? What yearly sum did its gold and silver mines formerly produce? What other minerals are found in abundance? What is the established religion? In what state is education? What is stated of the people? What is the government of Mexico? What is the population of Mexico? Where is the Gulf of Honduras situated?

Between what degrees of latitude and longitude is Central America situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate? What is the established religion of the several States? What is the government of each State? What is the population of Central America?

WEST INDIAN ISLANDS.

DIVISIONS.—The Baha'mas; the Greater Antil'les, the Lesser Antilles, divided into the Lee'ward and the Wind'ward Islands.

British Islands.—THE BAHAMAS, the principal of which are Great Bahama; Lucaya or Abaco; New Providence,—chief town, Nassau' 7, the seat of government; Andros; San Sal'vador; Wat'ling, supposed to be the first discovery of Columbus, 12th October 1492.

THE GREATER ANTILLES.—Jama'ica,—chief towns, Kings'ton 35, a strongly-fortified city, with an extensive commerce; Spanish Town 6, the seat of government; Port Royal; Grand Cayman,—chief town, George Town.

LEEWARD ISLANDS.—Bieque or Crab Island, Anega'da, Virgin Go'da, Torto'la; Domini'ca, so called by Columbus from its being discovered on a Sunday,—chief town, Rosseau' or Charlotte Town 5; Anti'gua,—chief town, St John 9; Barbu'da; Anguil'la; St Christopher's or St Kitt's,—chief town, Basseterre' 6; Ne'vis,—chief town, Charles'ton; Montserrat,—chief town, Plymouth.

WINDWARD ISLANDS.—St Lu'cia,—chief town, Castries, with one of the best harbours in the West Indies; Barba'does, the oldest British possession in the West Indies,—chief town, Bridge'town 21; St Vin'cent,—chief town, Kingston 5; Grena'da,—chief town, St George; Toba'go,—chief town, Scar'borough; Trinidad', the first land discovered by Columbus in his third voyage in 1498,—chief towns, Port of Spain 12; St Joseph.

French Islands.—North part of St Mar'tin's; Gua-

daloupe',—chief towns, Basseterre' 6, and Point à Pitre 20, with an extensive trade; Desirade' or Desea'da, the first discovery of Columbus in his second voyage in 1493; Mariegalan'tà; Saintes; Martinique',—chief towns, Fort Royal 7; St Pierre' 23, the chief emporium of the French trade in the West Indies.

Spanish Islands.—Cu'ba,—chief towns, Havan'nah 197, a strongly-fortified city, with a capacious harbour and extensive commerce; St Ja'go 37; Puer'to Principe 31, with a good trade in tallow and hides; Matan'zas 36, the second commercial town in the island; Trinidad' 14; Por'to Ri'co,—chief town, St Ju'an 20; the east part of Hay'ti or St Domingo,—chief town, St Domingo 15, the first town founded by Europeans in the New World: the remains of Columbus were deposited in the cathedral of this city.

Dutch Islands.—The south part of St Martin's; Sa'ba; St Eusta'tius, with a town of the same name 6; Buen-Ayre; Curaço'a,—chief town, Wil'liamstadt 7, with a considerable trade; Oru'ba.

Danish Islands.—San'ta Cruz or St Croix',—chief town, Chris'tianstadt 10; St Thomas, with a town of the same name; St John.

Swedish Island.—St Barthol'omew,—chief town, Gusta'via 10.

Independent.—The west part of Hayti or St Domingo,—chief towns, Port Republicain 30, with a good trade; Cape Hay'tien 12, formerly Cape François, a convenient seaport; Tortu'ga, of old a noted resort of the buccaneers.

The West Indian Islands are situated between 10° and 27° N. Lat., and between 59° and 85° W. Long. They are almost all mountainous, the summits in the larger islands attaining a great elevation.

Most of the islands lying within the tropics, their climate is

exceedingly hot, and many of them are unhealthy. The soil, with the exception of the more mountainous parts, is exceedingly fertile and productive.

The principal vegetable production is the sugar-cane; besides which, coffee, pimento, maize, tobacco, cotton, and many medicinal plants are reared in abundance. All the fruits of tropical climates are common. The cattle are of a diminutive size; sheep, goats, horses, asses, and mules are comparatively rare; but hogs are in general plentiful. Among the wild animals are swine, monkeys, etc.; snakes are common; and there are immense numbers of parrots, flamingoes, and humming-birds. Gold, silver, iron, lead, sulphur, and antimony are among the mineral productions. The established religion is generally that of the country to which they belong.

The western part of Hayti or St Domingo is a native republic. The government of the other islands is vested in governors appointed by the sovereigns of the countries to which they belong.

The population is about 3,917,000.

EXERCISES.—What are the divisions of the West Indian Islands? What is the chief town of New Providence? What is stated of Watling? How is Jamaica situated? What are its chief towns? What is said of Kingston? What town in Jamaica is the seat of government? Why was Dominica so called by Columbus? Which is the largest of the West Indian Islands? Which is the second largest? What island is situated east of Hayti? Name its chief town. What are the chief towns in Cuba? What is stated of Havannah? In what part of the island is it situated? What are the chief towns in Martinique? What is said of St Pierre? Whether is Guadeloupe or Martinique farther north? To what country do these two islands belong? Name the large island east of Jamaica. What are its chief towns? What is said of the east part of Hayti or St Domingo? What is said of the west part of Hayti or St Domingo? What was the former name of Cape Haytien? What is stated of Barbadoes? What is its chief town? What is the chief town of St Lucia? What is said of it? Which is the most southerly of the Windward Islands? What is stated of it? Name its chief towns. What is stated of Deseada? What is the chief town of Antigua? St Christopher's? Nevis? Montserrat? What is the population of Havannah? Puerto Principe? St Juan? Bridgetown? Port Republicain?

Between what degrees of latitude and longitude are the West Indian Islands situated? What is their general appearance? What is the nature of the climate and soil? What is the principal vegetable production? Mention some of the others. Of what descrip-

tion are the cattle? What animals are reared in small numbers? What animals are in general plentiful? Name some of the wild animals. What birds are in immense numbers? Enumerate some of the mineral productions. What is the established religion? What is the form of government in the western part of Hayti or St Domingo? In whom is the government of the other islands vested? What is the population of the West Indian Islands?

SOUTH AMERICA.

FOR THE GENERAL DIVISIONS OF SOUTH AMERICA,
see page 18.

COLOMBIA,

OR

NEW GRANADA,

Is bounded on the W. by Costa Rica and the Pacific Ocean; N. by the Caribbean Sea and Venezuela; E. by Venezuela; S. by Brazil, Ecuador, and the Pacific Ocean.

STATES.—Pana'ma, Bol'ivar, Magdale'na, Santan'der, Antioqu'ia, Boya'ca, Cundinamar'ca, Cau'ca, Toli'ma.

ISLANDS.—Pearl Islands, Coiba.

ISTHMUS.—Darien or Panama.

CAPIES.—Mal'a, Corrient'es.

GULF AND BAYS.—Gulf of Darien, Bay of Panama, Bay of Choco.

RIVER.—Magdalena.

MOUNTAINS.—The northern extremity of the Andes.

PRINCIPAL TOWNS.—Bogota' or Santa Fe de Bogota
43, *the capital of the state of Cundinamarca, and the*

seat of government of the New Granadian Confederation; Panama 12; Cartage'na 10, with a good harbour; San'ta Mar'tha 8; Popay'an 20, with gold-mines in its neighbourhood; Por'to Bel'lo, with a good harbour; Socor'ro 12.

Colombia, or New Granada, is situated between 2° S. Lat. and 12° 20' N. Lat., and between 68° and 83° W. Long. Its greatest length is about 1000 miles; its greatest breadth, about 1050 miles; its superficial extent, about 514,325 square miles.

The country is mountainous. The climate in the high table-lands, where most of the towns are situated, is equable and pleasant; in the lower grounds it is hot and unhealthy. The plants chiefly cultivated are cotton, indigo, sugar-cane, maize, and the plantain. There are numerous forests, which yield great abundance of ebony, mahogany, cedar, logwood, caoutchouc, and sarsaparilla. The country contains gold, silver, platinum, copper, tin, lead, iron, coal, and precious stones.

Among the wild animals are the tapir, the jaguar, the puma, the anteater, the sloth, the alligator or cayman, the electric eel, and serpents of several kinds.

The government is a federal republic, having its seat at Bogota, the executive power being vested in a President, the legislative in a Senate and Chamber of Deputies. The Roman-catholic is the prevailing religion.

The population is 2,794,473.

VENEZUELA

Is bounded on the W. by Colombia or New Granada; N. by the Caribbean Sea; E. by Guiana; S. by Brazil.

ISLAND.—Margarita.

GULFS.—Venezuela or Maracaybo, Pa'ria.

LAKE.—Maracaybo.

RIVER.—Orinoco.

PRINCIPAL TOWNS.—Carac'cas 50, the seat of government, with a good trade: Bolivar, the champion of South American independence, was born here in 1780; Maracaybo 20, a fortified town, with considerable commerce; Cuma'na 8, a flourishing seaport; Mer'ida 6; La Guay'ra, the port of Caraccas; Truxil'lo 5, so named after the town in Spain where Pizarro was born; Valencia 16.

Venezuela is situated between 1° 40' and 12° 10' N. Lat., and between 60° and 78° W. Long. Its length is about 900 miles; its breadth, about 800 miles; its superficial extent, 430,000 square miles.

The country is mostly level, consisting of vast plains watered by the Orinoco. The climate is hot and unhealthy in the low grounds, but cooler and more pleasant in the higher districts. The soil produces almost the same crops as in New Granada; but the farmers rear more cattle, for which the rich plains or *llanos* supply excellent pasture. The wild animals are nearly the same as those of New Granada. There are mines of silver, tin, copper, and coal; and asphalt and petroleum are found in abundance in the neighbourhood of Lake Maracaybo.

The government is a republic. The prevailing religion is the Roman-catholic.

The population is 2,200,000.

ECUADOR

Is bounded on the N. by Colombia or New Granada; W. by Peru and the Pacific Ocean; S. by Peru; E. by Brazil.

ISLANDS.—Gallipa'gos.

CAPE.—San Francis'co.

GULF.—Guayaquil.

MOUNTAINS.—Chimbora'zo (21,440 feet above the level of the sea), Cotopax'i, Antisa'na, Pichin'cha, and other peaks of the Andes.

RIVERS.—Maro'na, Chambira, and other tributaries of the Amazon or Maranon.

PRINCIPAL TOWNS.—Qui'to 76, the capital, situated in a ravine in the volcanic mountain of Pichincha, at a height of 9542 feet above the sea: it has a delightful climate, but has suffered much from earthquakes; Cuen'ca 20; Guayaquil 22, a thriving seaport, with a good harbour; Latacun'ga 10; Riobam'ba 16, in the neighbourhood of gold and silver mines.

Ecuador, or the Equator (so called because its capital lies almost under the line), is situated between 6° 10' S. Lat. and 2° 20' N. Lat., and between 69° 20' and 80° 30' W. Long. Its length is about 800 miles; its breadth, about 600 miles; its superficial extent, 300,000 square miles.

The country is partly mountainous, partly level,—its western portion being traversed by the Andes, its eastern by the tributaries of the Amazon or Maranon. Its agricultural productions and its animals are nearly the same as those of New Granada. Its numerous forests yield large quantities of ebony, mahogany, cedar, dye-woods, caoutchouc, and sarsaparilla. Among its minerals are gold, silver, lead, quicksilver, and sulphur.

The government is a republic. The Roman-catholic is the prevailing religion.

The population is 1,300,000.

GUIANA

Is bounded on the N. by the Atlantic Ocean; W. by Venezuela; S. by Brazil; E. by the Atlantic Ocean.

DIVISIONS.—British Guiana, comprehending the three settlements of Essequibo, Demera'ra, and Berbice'; Dutch Guiana; and French Guiana.

RIVERS.—Essequibo, Demerara, Berbice, Surinam', Marony.

MOUNTAINS.—The Par'imè Mountains.

PRINCIPAL TOWNS.—In **BRITISH GUIANA.**—Georgetown 26, the capital; New Amsterdam 5.

DUTCH GUIANA.—Paramaribo 16, with an active commerce.

FRENCH GUIANA.—Cayenne' 6, on an island of the same name.

The country now commonly known as Guiana is situated between $0^{\circ} 40'$ and 9° N. Lat., and between 51° and 61° W. Long. Its length is about 710 miles; its breadth, about 560 miles; its superficial extent, about 163,000 square miles. It is low and flat along the sea, but rises inland by a succession of tablelands to the mountain-ranges on the borders of Brazil.

The climate is cooler than in most other countries within the tropics; the soil is exceedingly fertile, yielding in abundance sugar, coffee, cotton, and other tropical productions.

The population is about 250,000; of which British Guiana has 155,000, Dutch Guiana 62,000, French Guiana 30,000.

BRAZIL

Is bounded on the N. by the Atlantic, Guiana, Venezuela, and Colombia or New Granada; W. by Ecuador, Peru, Bolivia, Paraguay, and La Plata or the Argentine Republic; S. by Uruguay or the Banda Oriental; E. by the Atlantic Ocean.

ISLANDS.—Joan'es or Mara'jo, Fernan'do de Noron'ha, Santa Catherina, Caviany, Martin Vaz.

CAPIES.—Cape de Norte, St Roque, Bran'co, St Thomas, Fri'o.

MOUNTAINS.—Mountains of Brazil, Sierra do Espinhaço, Sierra do Mar.

RIVERS.—Amazon, Orellana, or Maranon, the largest river in the world (with its tributaries Ri'o Ne'gro, Ya-

pura, Madeira, Tapa'jos, Xingu); Tocantins'; Parahy'ba; San Francisco; Ri'o de Janei'ro.

PRINCIPAL TOWNS.—Rio Janeiro 296, the capital, and the largest city of South America, with an extensive commerce and one of the finest harbours in the world; Victo'ria 6; St Sal'vador or Bahi'a 125, once the capital, and next to Rio Janeiro the largest city in South America; Cachoei'ra 15, the mart for the produce of the gold-mines; Alago'as 6; Pernambu'co, with its dependencies Olin'da, Recife', San Anto'nio, and Bo'a Vis'ta 92, carries on an extensive trade; Parahy'ba 15; Natal 10, with considerable exports of brazil-wood; Mar'anhao (Mar'anham) or San Lu'is 30, with an extensive trade in cotton and rice; Pa'ra or Be'lem 20, with a great export trade; San'tarem 5; Rio Negro; Mat'to Gros'so or Villa Bel'la 15; Cuya'ba 10; Goy'az 8 (formerly Villa Boa); Ou'ro Pre'to 8 (formerly Villa Ri'ca), with extensive manufactures, is famous for its gold-mines; St Pau'lo 12; San'tos 8, with a good trade.

Brazil is situated between 4° N. and 33° S. Lat., and between 35° and 72° 20' W. Long. Its length from north to south is about 2600 miles; its breadth from east to west 2450 miles; its superficial extent, 3,230,000 square miles. The greater portion of the country consists of vast mountain-ranges, between which are extensive valleys of the most fertile soil.

The climate is in general warm but healthy; in the higher elevations it is temperate, and even cold.

The staple vegetable productions are sugar, coffee, cotton, tobacco, wheat, maize, rice, the cassava-plant, and the *matis* or Paraguay tea-plant. Horses, cattle, and sheep are reared in immense numbers. Among the wild animals are the sloth, the anteater, the armadillo, the tapir, the alligator, the rattlesnake, the boa-constrictor, and the humming-bird. Brazil is infested with vast numbers of insects of many kinds. It is celebrated for its diamonds; gold, silver, copper, iron, platinum, and a variety of *precious stones* are found in abundance.

The established religion is the Roman-catholic, but others are partially tolerated. Education is much neglected.

The government is a hereditary constitutional monarchy, under a prince of the royal family of Portugal, who takes the style of Emperor.

The population is estimated at 11,780,000.

PERU

Is bounded on the N. by Ecuador; W. by the Pacific Ocean; S. by Bolivia; E. by Bolivia and Brazil.

CAPE.—Blan'co.

BAYS.—Ferrol, Guarmey, Pisco, Pisagua.

MOUNTAINS.—The Andes.

RIVERS.—Ucayal'i (with its tributaries); New Marañon.

LAKE.—Titicaca.

PRINCIPAL TOWNS.—Li'ma 70, the capital, founded in 1534 by Pizarro, who is buried in its cathedral: it is the seat of the oldest university in the New World, and has a large trade; Calla'o 20, the port of Lima, with an excellent harbour; Truxillo 6, founded by Pizarro in 1535, and named from the town in which he was born in Spain; Caxamar'ca 7, where the last of the Incas was put to death by Pizarro in 1533; Huanca-vel'ica 8, famous for the rich quicksilver-mines in its neighbourhood; Ayacu'cho, formerly Guaman'ga 16, in the neighbourhood of silver, gold, and quicksilver mines; Cuz'co 45, of old the splendid capital of the Incas, and held sacred by the Peruvians: it still contains traces of its ancient splendour; Arequi'pa 38, has been six times destroyed by eruptions of Oma'ti, a volcano 20,000 feet

high, in its immediate neighbourhood; Pu'no 9; P'as'co 12, next to Potosi, in Bolivia, the highest city in the world, being 12,870 feet above the level of the sea; its silver-mines are believed to be the richest in existence.

Peru is situated between $3^{\circ} 30'$ and 22° S. Lat., and between 69° and $81^{\circ} 15'$ W. Long. Its greatest length is about 1500 miles; its breadth, 580 miles; its superficial extent, 503,000 square miles. The country is exceedingly mountainous, being traversed by the Andes throughout its whole extent.

The climate is healthy, but varies from extreme heat in the low plains to extreme cold on the summits of the mountains. The soil is equally varied,—that of the eastern valleys is extremely fertile, while the other parts are sterile and sandy. Peru is noted for its mines of silver, copper, lead, and mercury. Large quantities of guano are exported from it to Britain. Among the indigenous animals are the alpaca and llama.

The only religion either professed or tolerated is the Roman-catholic. Education is little attended to.

The government is a republic.

The population is about 2,865,000.

EXERCISES.—How is New Granada bounded? What States does it comprehend? What are the boundaries of Venezuela? How is Ecuador bounded? Why is it called Ecuador? Where is the Gulf of Guayaquil? Maracaybo? Darien? Paria? Where is Cape Mala? San Francisco? Corrientes? Into what does the Orinoco flow? Magdalena? Where is Mount Chimborazo? What is the capital of Venezuela? What is stated of Cumana? What is the seat of government of New Granada? What is said of Porto Bello? Cartagena? Popayan? What is the capital of Ecuador? What is the population of Caraccas? Bogota? Quito? Who was born at Caraccas? After what place in Spain was Truxillo named?

What are the boundaries of Guiana? Name its divisions. Which is the most easterly? the most westerly? In what direction does the Surinam flow? In what division is it? What are the chief towns in British Guiana? Where are they situated? What is the principal town in Dutch Guiana? On what river is it situated? What is stated of it? Name the chief town in French Guiana. What is the population of Georgetown? Paramaribo? Cayenne?

How is Brazil bounded? Into how many provinces is it divided? Where is the island Santa Catherina? Joanes? Fernando de Noronha? Where is Cape de Norte? Cape Roque? Frio? In what direction does the Amazon flow, and into what does it fall? What is said of it? In what direction does the San Francisco flow? the

Madeira? the Tocantins? What is the capital of Brazil? What is stated of it? What is stated of St Salvador or Bahia? Cachoeira? Maranham? Para? Ouro Preto? What is the population of Rio Janeiro? St Salvador? Pernambuco, with its dependencies? Maranham?

What are the boundaries of Peru? Into how many departments is it divided? Name its rivers. What lake does it contain? What is the capital of Peru? What is stated of it? What is said of Callao? What took place at Caxamarca, and when? For what is Huancavelica famous? What is stated of Cuzco? Guamanga? Arequipa? What is the population of Lima? Cuzco? Arequipa?

Between what degrees of latitude and longitude is New Granada situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate and soil? Name the wild animals. What minerals are in great abundance? What is the religion? What is the government? What is the population?

Between what degrees of latitude and longitude does Venezuela extend? What are its length, breadth, and superficial extent? By what river is it watered? What is its climate? What substances are found near Lake Maracaybo? What is the government of Venezuela? What is the prevailing religion? What is the population?

Between what parallels of latitude and meridians of longitude is Ecuador situated? What are its length, breadth, and superficial extent? What mountains traverse its western provinces? By what rivers are the eastern provinces watered? What productions do the forests yield? What is the government of Ecuador? What is the prevailing religion? What is the population?

Between what degrees of latitude and longitude is Guiana situated? What is the appearance of the country? What is the nature of the climate and soil? What vegetables are produced in great abundance? What is the population of Guiana?

Between what degrees of latitude and longitude is Brazil situated? What are its length, breadth, and superficial extent? Of what does the greater portion of the country consist? What is the nature of the climate? What are the staple vegetable productions? What animals are reared in immense numbers? For what is Brazil celebrated? What minerals are found in abundance? What is the established religion? In what state is education? What is the government? What is the population?

Between what degrees of latitude and longitude is Peru situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate? of the soil? For what minerals is Peru noted? What is the established religion? In what state is education? What is the government? What is the population of Peru?

BOLIVIA

Is bounded on the N. by Brazil and Peru; W. by Peru and the Pacific Ocean; S. by Chili and La Plata or the Argentine Republic; E. by Paraguay and Brazil.

MOUNTAINS.—The Andes, among which are the two volcanoes of Gualateiri, 21,960 feet, and Sahama, 22,350 feet above the sea-level.

RIVERS.—Guapo're (one of the affluents of the Marañon or Amazon) and its tributaries; Desaguadero; Pilaya (one of the affluents of the Paraguay) and its tributaries.

PRINCIPAL TOWNS.—Chuquisa'ca or Sucre 24, the capital; Cochabam'ba or Oropesa 41, with manufactures of glass and cotton, a fine palace, and a large cathedral; La Paz 76, the largest city, and the commercial metropolis of Bolivia; Poto'si 23, the highest city in the world, being 13,350 feet above the level of the sea: its silver-mines are among the richest anywhere wrought; San'ta Cruz de la Sier'ra 10.

Bolivia or Upper Peru is situated between 10° and 23° S. Lat., and between 58° and 70° 40' W. Long. Its greatest length is about 1100 miles; its breadth, 800 miles; its superficial extent, 400,000 square miles. It is traversed by lofty mountains on the west, while on the east it expands into large plains watered by the tributaries of the Amazon and the Parana.

Owing to the inequality of the surface, the climate is exceedingly diversified. The soil of the plains is very fertile; the vegetable and animal productions are similar to those of Peru. It exceeds that country in mineral riches, yielding silver, gold, mercury, tin, lead, antimony, copper, and iron.

The prevailing religion is the Roman-catholic. The government is republican.

The population is 1,987,352.

PARAGUAY

Is bounded on the N. by Brazil; W. by Bolivia and La Plata or the Argentine Republic; S. by La Plata; E. by Brazil and La Plata.

RIVERS.—Paraguay and Para'na.

PRINCIPAL TOWNS.—Assump'tion 8, the capital, a place of considerable trade: it was founded by the Spaniards in 1535; Villa Ri'ca; Concep'tion.

Paraguay is situated between 21° and 27° 20' S. Lat., and between 54° and 58° 40' W. Long. Its greatest length is about 450 miles; its breadth, 230 miles; its superficial extent, 73,000 square miles. The greater portion of the country is a vast plain, the soil of which is exceedingly fertile. The climate upon the whole is agreeable and healthy. The most noted vegetable production is the herb *matte*, a species of tea, which is produced in great abundance.

The population in 1857 was about 1,337,439.

URUGUAY, OR THE BANDA ORIENTAL,

Is bounded on the N. by Brazil; W. by La Plata, or the Argentine Republic; S. by the Rio de la Plata; E. by the Atlantic.

CAPE.—San'ta Mari'a.

RIVERS.—Uruguay, Ne'gro.

PRINCIPAL TOWNS.—Mon'te Vid'eo 45, the capital, a fortified city, with an extensive trade in hides; Maldona'do; Colo'nia.

Uruguay, or the Banda Oriental, is situated between 30° and 35° S. Lat., and between 52° and 58° W. Long. Its length is about 360 miles; its breadth, about 330 miles; its superficial

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extent, 73,538 square miles. The country is flat and bare near the coast, but rugged or hilly, and in many parts thickly wooded in the interior. The climate is temperate and healthy. The inhabitants rear great numbers of cattle and horses.

The government is republican.

The population is 240,965.

LA PLATA,

OR

THE ARGENTINE REPUBLIC,

Is bounded on the N. by Bolivia; W. by Chili; S. by Patagonia; E. by the Atlantic, Uruguay, or the Banda Oriental, Brazil, and Paraguay.

CAVES.—San Antonio, Corrientes.

GULFS AND BAYS.—Estuary of the Rio de la Plata, Bahía Blanca.

LAKES.—Guanacache, Silverio, Benedero, Urre Lauguen, Porongos.

RIVERS.—Paraguay and its tributaries; Parana and its tributaries; Rio de la Plata; Colorado or Mendoza; Negro or Cusu.

PRINCIPAL TOWNS.—Parana 8, the capital; Buenos Ayres 140, a place of great trade, founded by the Spaniards in 1535; Cordova 25, with a university, and considerable manufactures of cotton and wool; Mendoza 18, nearly destroyed by an earthquake in 1861; Tucuman 11; Santa Fe 15, with an active trade; Salta 11; Corrientes 16.

La Plata is situated between 22° and 41° S. Lat., and between 54° and 72° W. Long. Its length is about 1350 miles; its breadth, about 900 miles; its superficial extent, 826,800 square

miles. The country consists of immense plains, called *Pampas*, traversed on the western border by the chain of the Andes. In the plains the climate is oppressively hot; but in the mountains the temperature varies with the height. The greater part of the soil is extremely fertile, producing, in the northern and central districts, all the productions of northern countries, and in the south excellent wheat and other grains. Immense flocks of sheep, with herds of oxen and horses, both in a domestic and wild state, roam over the boundless and luxuriant plains. The exports of the country are chiefly raw produce, such as tallow, hides, skins, bones, wool, and fur.

The prevailing religion is the Roman-catholic, but other creeds are tolerated. The government is a federal republic.

The population in 1866 was 1,465,000.

CHILI, or CHILE,

Is bounded on the N. by Bolivia; W. by the Pacific Ocean; S. by Patagonia; E. by Patagonia and La Plata, or the Argentine Republic.

ISLANDS.—Chiloe; Ju'an Fernan'dez, celebrated as the lonely four years' abode of Alexander Selkirk, which suggested the popular story of Robinson Crusoe; Mas-a-fue'ra.

MOUNTAINS.—The Andes, which here attain their greatest height in the peak of Aconcagua, 23,910 feet above the sea-level.

PRINCIPAL TOWNS.—Santia'go 80, the capital, the seat of a university: there is a railway between it and its port of Valparaí'so; Concep'tion 10, overthrown by an earthquake in 1835; Valdi'via, with a capacious harbour; Valparaíso 75, the seaport of Santiago, with extensive commerce; Coquim'bo 8, in the neighbourhood of mines of gold, silver, and copper; San Carlos, in the island of Chiloe.

Chili is situated between 23° and 43° 20' S. Lat., and between 69° and 74° W. Long.; its length being about 1400 miles by 120 in breadth; and its superficial extent, 139,000 square miles. The country is a long narrow strip along the Pacific Ocean, rising gradually from the sea to the summits of the Andes.

The climate is mild and healthy, and the soil is generally good. The usual grains and fruits of Europe are produced in abundance. Great attention is devoted to the breeding of cattle, horses, mules, and asses; but the sheep are inferior. The country is singularly rich in minerals, yielding gold, silver, copper, lead, tin, zinc, mercury, manganese, arsenic, and antimony.

The religion is the Roman-catholic, and the public celebration of any other form of worship is forbidden. The government is republican.

The population is 1,676,243.

PATAGONIA

Is bounded on the N. by La Plata and Chili; W. by the Pacific Ocean; S. by the Straits of Magellan; E. by the Atlantic.

GULFS.—St Matías, St George, Peñas, Chonos.

STRAITS.—Magellan, Le Maire.

CAVES.—Point Desire, Cape Horn, Froward (the most southerly point of the mainland of America); Cape Gloucester, Cape Pillar.

RIVERS.—Rio Negro, Santa Cruz.

LAKE.—Colagua'pe.

ISLANDS.—Terra del Fuego, Staten Island, Cape Horn, Desolation Land, Ma'dre de Dios Archipelago, Wellington Island, Chonos Archipelago.

Patagonia is situated between 38° 45' and 55° 58' S. Lat., and between 62° 10' and 74° W. Long. Its length is about 1200 miles; its greatest breadth, about 550 miles; its superficial extent, *about 350,000 square miles.*

The country is imperfectly known to Europeans. It is divided by the Andes into two widely differing regions. The western, a narrow strip between the sea and the mountains, is claimed, together with the islands on the coast, by Chili, which has here planted two colonies—Llanquihue, on the mainland, opposite to the island of Chiloe; and Magellanes, on the Strait of Magellan. The territory to the east of the Andes is flat and barren.

The natives, a tall and robust race, were described by the early voyagers as giants; they have no towns, and lead a wandering life. The population is estimated at 120,000.

THE FALKLAND ISLANDS.

The Falkland Islands, about two hundred in number, are situated in the South Atlantic Ocean, about 300 miles N. E. of Terra del Fuego. Their superficial extent is estimated at about 13,000 square miles. Their population is 620. They belong to Great Britain, and were erected into a colony in 1833.

EXERCISES.—What are the boundaries of Bolivia? What two volcanic mountains does it contain? What are their heights? What is the capital? At what height above the level of the sea is Potosi situated? What else is stated of it? What is said of La Paz? What is the population of Sucre or Chuquisaca? Oropesa? La Paz?

How is Paraguay bounded? What is the capital? On what river is it situated? What is the population of Assumption?

How is Uruguay bounded? By what other name is it known? What is its capital? How is it situated? What is stated of it? What is the population of Monte Video?

How is La Plata bounded? By what other name is it called? What is the capital? On what river is it situated? What is said of Buenos Ayres? What is stated of Cordova? What is the population of Parana? of Buenos Ayres? Cordova? Where is Cape San Antonio? In what direction do the Colorado and Negro flow?

How is Chili bounded? Name its islands. What is the chief town in Chiloe? For what is Juan Fernandez celebrated? What is the capital of Chili? What calamity befell Concepcion, and when?

What is the seaport of Santiago? In what does the vicinity of Coquimbo abound?

How is Patagonia bounded? Where is the Gulf of Penas? St George? Chonos? Where are the Straits of Magellan? Le Maire? What cape is the most southerly point of the mainland of America?

Between what degrees of latitude and longitude is Bolivia situated? What are its length, breadth, and superficial extent? What is the aspect of the country? What is the nature of the climate and soil? What is the prevailing religion? What is stated of the people? What is the government? What is the population of Bolivia?

Between what degrees of latitude and longitude is Paraguay situated? What are its length, breadth, and superficial extent? What is the appearance of the country? What is the nature of the climate and soil? What is the most noted vegetable production? What is the population of Paraguay?

Between what degrees of latitude and longitude is Uruguay or the Banda Oriental situated? What are its length, breadth, and superficial extent? What is the government? What is the population?

Between what degrees of latitude and longitude is La Plata, or the Argentine Confederation, situated? What are its length, breadth, and superficial extent? Of what does the country consist? What is the nature of the climate? of the soil? What animals roam over its boundless plains? What are the chief exports? What are the religion and government? What is the population of La Plata?

Between what degrees of latitude and longitude is Chili situated? What are its length, breadth, and superficial extent? What is the general aspect of Chili? What is the nature of the climate and soil? What vegetables are abundantly produced? To the breeding of what animals is great attention devoted? What is stated of the sheep? What are the chief mineral productions? What is the religion? What is the government? What is the population of Chili?

Between what degrees of latitude and longitude does Patagonia extend? What are its length, breadth, and superficial extent? By what range of mountains is it divided? By what state is the western district claimed? What is the aspect of the eastern territory? What is stated of the natives? At what number is the population estimated?

Where are the Falkland Islands situated? What is their number? What is their superficial extent? What is their population? When were they erected into a British colony?

SACRED GEOGRAPHY.

PALESTINE, OR THE HOLY LAND,

Was bounded on the N. by Syr'ia; on the W. by the Mediterranean Sea, called in the Bible the Great Sea; on the S. by Arabia; and on the E. by Arabia and Syria.

It is also called in Scripture the Land of Ca'naan; the Land of Promise; the Land of Ju'dah; the Land of Is'rael; and the Land of the He'brews.

Palestine was originally inhabited by the Am'orites on both sides of the Jor'dan; the Sido'nians in the north-west; the Hi'vites in the north-east; the Gir'gashites or Gergesenes' east of the Sea of Galilee; the Per'izzites on the western side of the Jordan; the Hit'tites on the west of the Dead Sea; the Jeb'usites west from the northern part of the Dead Sea, and the Philis'tines along the south-west coast.

TRIBES.—Ash'er, in the north-west; Naph'tali, east of Asher; Zeb'ulon, south of Asher; Is'sachar, Half Tribe of Manas'seh, E'phraim, and Ben'jamin, west of the Jordan; Ju'dah, west of the Dead Sea; Dan and Sim'eon, in the south-west, on the coast; Half Tribe of Manasseh, Gad, and Reu'ben, west of the Jordan.

ROMAN PROVINCES.—Gal'ilee, in the north; Sama'ria in the middle; Jude'a, in the south; and Pere'a, east of the Jordan.

GALILEE (divided into Upper Galilee or Galilee of the Gentiles, and Lower Galilee), comprehending the tribes of

Asher.—Principal towns,—Tyre and Si'don, famous for their commerce, but no less notorious for their

wickedness; Sarep'ta or Zar'ephath, where Elijah raised the widow's son to life; Ac'cho or Ptolema'is, all on the coast.

Naphtali.—Ka'desh-Naph'tali; Kar'tan or Kirja-tha'im; Bethsa'ida, and Caper'naum, in the neighbourhood of which our Saviour often preached and performed many miracles; Chin'nereth; Ha'zor; Har'osheth of the Gentiles; Ham'moth - Dor; La'ish or Cesare'a-Philip'pi, near the source of the Jordan.

Zebulon.—Jok'neam, near Mount Car'mel; Ta'bor; Tibe'rias, on the Sea of Galilee, so called in honour of Tiberias Cæsar, where St Matthew was found sitting at the receipt of custom; Naz'areth, noted as the place where our Saviour spent the earlier part of his life on earth; Ca'na of Galilee, where our Saviour performed his first miracle by turning water into wine.

Issachar.—Jez'reel, where Naboth was stoned to death by order of Jezebel; Shu'nem, where Elisha raised a young man from the dead; Dab'erath; Na'in, where Christ restored the widow's son to life; A'nem or Engan'nim; Beth'shemesh.

SAMARIA, comprehending the tribe of

Ephraim.—Sama'ria, the capital of the ten tribes of Israel; She'chem or Sy'char, near which was Jacob's well, where Christ spoke with the woman of Samaria; Lyd'da, where St Peter healed Eneas, who was sick of the palsy; Sha'ron, Lasha'ron, or Sa'ron, situated in a district celebrated for its roses; Shi'loh, where Joshua divided Canaan among the tribes, and fixed the Tabernacle, which remained here upwards of 300 years.

Half Tribe of Manasseh.—Cesare'a, the residence of the Roman governors, where Herod Agrippa was eaten up of worms, and where St Paul was tried before Felix and Festus; and Dor, both on the coast; Megid'do; *Scythop'olis* or Beth'shan; En'dor, where Samuel ap-

peared to Saul at the witch's incantation; Do'than, where Joseph was sold by his brethren to the Ishmaelites.

JUDEA, comprehending the tribes of

Benjamin.—Jerusalem, the city of David, formerly called Je'bus or Sa'lem, the capital of the kingdom of Judah: it was about five miles in circumference, and had eleven gates; Beth'any, where our Saviour raised Lazarus from the dead; and Beth'phage, on the east of Jerusalem; Jer'icho, the first city taken by Joshua; Gib'eon, where Joshua defeated five kings, on which occasion the sun and moon stood still; Ra'mah, where Samuel dwelt and was buried; Luz or Beth'el, remarkable for Jacob's memorable vision; Em'maus, on the road to which our Saviour first appeared to his disciples after his resurrection.

Judah.—Beth'lehem, the birthplace of our Saviour and of David, near which the angels appeared to the shepherds; He'bron, where Abraham was buried; Ka'desh-Bar'nea, whence Moses sent the spies; Mak'ke'dah, near which Joshua defeated and hanged the five kings who had made war upon Gibeon; Adul'lam, near which David concealed himself in a cave from Saul; Beth'shemesh, where the ark was restored; Kir'-jath-Je'arim, where the ark remained for a long time.

Dan.—Jop'pa or Jaffa, in the north-west, on the coast, where the Prophet Jonah embarked for Tar'shish, and where St Peter restored Dorcas to life; Gath, the city of Goliath the giant; Ek'ron; Ash'dod or Azo'tus, near the coast, where stood the famous temple of Dagon; Tim'nath, where Samson slew the lion; Ai'-jalon; Arimathe'a, where Joseph the honourable counsellor dwelt.

Simeon.—Beer'sheba, where Abraham, Isaac, and Jacob dwelt: in the neighbouring desert, Hagar, fleeing with Ishmael, was visited by an angel; Hor'mah;

Ge'rar; Ga'za, the gates of which Samson carried almost to Hebron; As'kelon, on the coast, a noted city of the Philistines.

PEREA, comprehending the

Half Tribe of Manasseh.—Ge'shur; Go'lan; Cho-ra'zin; Mag'dala and Dalmanu'tha, on the Sea of Galilee; Ash'taroth-Kar'naim, the residence of Og, king of Ba'shan; Ed'rei; Gad'ara, near which two men possessed with devils were healed by Christ.

Gad.—Ra'moth-Gil'ead, where Ahab, King of Israel, was slain by an arrow; Kar'kor, where Gideon defeated the Midianites, and slew their two kings; Suc'oth; Mahana'im, so called from Jacob's vision of two hosts of angels; Ja'bish-Gil'ead; Penu'el or Peni'el, near the Jab'bok.

Reuben.—Hesh'bon; Ja'haz, where Moses defeated Sihon, King of the Amorites; Be'zer or Boz'rah; Med'eba; Bethab'ara, where John baptized, and near which the Israelites crossed the Jordan.

MOUNTAINS.—Leb'anon, on the north of Palestine, divided into two ranges, Lib'anus on the west, and Anti-Lib'anus on the east; Car'mel, in the north-west of the Half Tribe of Manasseh, west of the Jordan, where Elijah offered his famed sacrifice, when the four hundred and fifty prophets of Baal were slain; there is another Carmel in Judah, where Nabal and Abigail lived, and in a cave of this mountain, near En'gedi, David surprised Saul; Mount Ta'bor, in the south of Zebulun, supposed to be the place of Christ's transfiguration; Gil'boa, noted for the total defeat of the Hebrews, and the death of Saul and his three sons; and Her'mon, in Manasseh, west of the Jordan; Ga'ash, where Joshua was buried; E'bal and Ger'izim, where Joshua promulgated the law: on Gerizim the Samaritans built a temple where they worshipped rather than

at Jerusalem ; E'phraim, where Micah and the idolatrous priest lived, in the tribe of Ephraim.

Zi'on, A'cra, Mori'ah, and Bez'etha, on which Jerusalem was built ; Mount Cal'vary, on the west of the city, where our Saviour was crucified, and Ol'ivet, or the Mount of Olives, on the east of it ; on Moriah, God commanded Abraham to offer up his son Isaac, and afterwards Solomon's temple was built upon it ; the mountains of Ab'arim, in the tribe of Reuben, the most noted being the Heights of Ne'bo, Pe'or, Pis'gah, and Ba'al : from Pisgah, Moses viewed the Promised Land, and here he died and was buried ; Gil'ead, famed for its balm, on the east and south of the Half Tribe of Manasseh, and the north of Gad ; Her'mon, Sir'ion or Si'on, on the north-east of Manasseh : Scripture alludes to the frequent dews which fall upon this mountain ; Ba'shan, in the Half Tribe of Manasseh, east of the Jordan, noted for its rich pastures, fine cattle, and stately oaks.

RIVERS.—The waters of Leb'anon flow south-west through the tribe of Asher ; the Ki'shon, in which great part of Sisera's army was drowned, flows north-west through Issachar and Zebulun ; the Ka'nah flows west, forming part of the boundary between Ephraim and the Half Tribe of Manasseh ; the Ga'ash, between Dan and Ephraim ; the So'rek with its tributary the Esh'col, so called from the large cluster of grapes which Caleb and Joshua carried thence when they spied the land, rises in the mountains of Judah, near Jerusalem, and flows south-west through Judah and Simeon ; the Be'sor, where two hundred of David's men, being overtaken by sickness, remained, while with four hundred he pursued the Amalekites who had burned Zik'lag, flows west through Simeon ; the River of Egypt or Si'hor forms the south-western boundary of Palestine ; all these flow into the Mediterranean Sea.

The Jordan rises in Anti-Libanus, flows south through the Waters of Me'rom and the Sea of Galilee, and falls into the Dead Sea; the Ar'non, forming the eastern and southern boundary of Reuben, falls into the Dead Sea; the Jab'bok, near which Jacob wrestled with the angel, flows north-west through Gad and joins the Jordan; the Gad'ara flows through the Half Tribe of Manasseh, and falls into the Jordan south of the sea of Galilee; the Kid'ron or Ce'dron, which Christ crossed in his way to the garden of Gethsem'ane, rises north of Jerusalem, and flows south-east into the Dead Sea; the Che'rith, in Ephraim, on the banks of which Eljiah was fed by ravens, falls into the Jordan.

LAKES.—The Waters of Me'rom or the Upper Lake, near which Joshua overcame the confederated Canaanitish kings; the Sea of Gal'ilee, or Lake of Gennes'areth, or Sea of Tibe'rias, or Sea of Chin'nereth,—celebrated for Christ's walking on its waters, stilling the tempest, causing the miraculous draught of fishes, etc.,—between Manasseh on the east, and Naphtali, Zebulon, and Issachar, on the west; the Sea of Ja'zer, in the east of Gad; the Dead Sea, or Lake of Sod'om, or Sea of the Plain, or Salt Sea, in the vicinity of which Sodom, Gomor'rah, Ad'mah, and Zebo'im were situated.

PLAINS, VALLEYS, WOODS, ETC.—The Plain of Megid'do or Jez'reel, where Josiah, King of Judah, was slain, in Issachar and Zebulon; the Plain of Sharon, in the west of Ephraim and Manasseh; another in the east of Zebulon, and a third in Gad; the Plain of Mo'reh, between Mounts Ebal and Gerizim, in the north of Ephraim; the Valley of A'chor, where Achan was stoned to death for having concealed part of the accursed spoil at the taking of Jericho, contrary to the express command of Joshua; *the Wilderness of Jude'a*, where John the Baptist began

his public ministry, and where our Saviour fasted forty days, and was tempted of the devil, along the west bank of the Jordan and the Dead Sea; the Valley of Hin'nom, where the Jews sacrificed their children to the idol Moloch; the Valley of Sha'veh or King's Dale, the Valley of Jehosh'aphat, and the Valley of Reph'aim, in the neighbourhood of Jerusalem.

In the north-west of Judah are the Valley of Zeph'athah, the Valley of E'lah, where David slew Goliath of Gath; the Forest of Ha'reth, where David hid himself from Saul; the plain of Mam're, where Abraham entertained three angels, south of Hebron. On the west of the Dead Sea are the Valley of Salt, where David smote the Syrians; the Wilderness of Ma'on; the Wilderness of Jer'uel; the Wilderness of Ziph; and the Wilderness of Teko'ah, a city of which Amos the prophet was a herdsman; the Wood of E'phraim, in Gad, where Absalom's army was defeated, and himself slain by Joab.

EGYPT, OR MIZ'RAIM,

Was bounded on the N. by the Mediterranean; W. by the Deserts of Lib'ya; S. by Ethio'pia; E. by the Red Sea and Arabia. It was watered throughout its whole extent by the Nile.

DIVISIONS AND CHIEF TOWNS.

UPPER EGYPT.—No or Thebes, on the Nile; Sye'ne, in the south, on the Nile, near the borders of Ethiopia.

MIDDLE EGYPT.—Noph or Mem'phis, on the Nile, near which are the famous pyramids; Bab'yion, on the Nile, where, as some suppose, St Peter wrote his first Epistle.

LOWER EGYPT.—Zo'an or Ta'nis; Sin or Pelu'sium, on the coast; Alexan'dria, on the coast, founded by

Alexander the Great; Tah'panhes; A'ven or Beth'shemesh, called also On or Heliop'olis; Mig'dol; Rame'ses (now Cairo), on the Nile, whence the Israelites took their departure; Pi'thom and Raam'ses, the two cities for the building of which the Hebrews made brick; Suc'coth, where the Israelites on their journey first set up their tents; Phib'eseth.

ARABIA

Was bounded on the N. by Palestine, Syria, and Chalde'a; W. by Egypt and the Red Sea; S. by the Erythræ'an Sea; E. by the Persian Gulf.

DIVISIONS.—Arabia Petræ'a, in the north-west; Arabia Fe'lix, in the west and south; Arabia Deser'ta, in the east and in the interior.

TRIBES.—Am'monites, Mo'abites, E'domites, Am'alekites, Mid'ianites, Ish'maelites, etc.

TOWNS.—Rab'bath or Philadel'phia; Be'la or Zo'ar, on the south of the Dead Sea; E'zion-ga'ber, on the eastern gulf of the Red Sea, from which the ships of Solomon traded to O'phir; E'lath, on the same gulf.

MOUNTAINS.—Se'ir; Hor, where Aaron died; Ho'reb, where Moses saw the burning bush; Si'nai, where the Lord delivered The Ten Commandments to Moses.

PLACES MENTIONED IN THE ROUTE OF THE ISRAELITES.—Ma'rah, the waters of which the Israelites could not drink on account of their bitterness, until they were made sweet by Moses casting into them a tree that had been shown him by the Lord; E'lim, where were twelve wells and seventy palm-trees; Wilderness of Sin, between Elim and Sinai; Reph'idim, where the Israelites tempted the Lord, and murmured against Moses for want of water; Mer'ibah, where Moses by striking the rock brought water out of it; Wilderness of Sinai; Tab'erath, where the fire of the Lord, which burned

among the Israelites, was quenched by the prayer of Moses; Kib'-roth-Hatta'avah, where those who lusted for flesh were buried; Haze'roth, where Miriam, the sister of Moses, was smitten with a leprosy for railing against him, but was cured by his prayers; Wilderness of Pa'ran; Zalmo'nah; O'both.

SYRIA, OR A'RAM,

Was bounded on the N. by A'sia Mi'nor; W. by Asia Minor and the Mediterranean; S. by Palestine and Arabia; E. by Arabia and the Euphra'tes.

DIVISIONS.—Syria of Damas'cus; of Ma'achah; of Ha'math; of Zo'bah; of Tob; of Re'hob.

RIVERS.—Ab'ana and Phar'par.

TOWNS.—An'tioch, where the disciples were first called Christians; Damas'cus, whither St Paul was journeying when he was converted; Rib'lah, where Nebuchadnezzar put out the eyes of Zedekiah, and slew his sons; Tad'mor or Palmy'ra, built by Solomon; Seleu'cia, whence Paul and Barnabas embarked for Cyprus; Tiph'sah or Thap'sacus, on the Euphrates, the north-east boundary of Solomon's kingdom.

MESOPOTA'MIA, OR PA'DAN-A'RAM,

Was situated between the river Hid'dekel or Ti'gris on the east, and the river Euphrates on the west.

TOWNS.—Tel'abib, on the Che'bar: on the banks of this river Ezekiel saw several of his visions; Car'chemish or Circe'sium, on the Euphrates, near which it is joined by the Chebar; Ha'ran or Char'ran, near the source of the Chebar, where Terah the father of Abraham died; Ur of the Chaldees', near Haran, the birthplace of Abraham; Reho'both, on the Ti'gris.

BABYLONIA, OR CHALDEA SOUTH OF MESOPOTAMIA.

TOWNS.—Bab'ylon, the most ancient city in the world, founded by Nimrod, on the Euphrates, in the plain of Shi'nar; E'rech, on the Euphrates, below Babylon; Cal'neh, on the Tigris, afterwards the celebrated Ctes'iphon; Ac'cad, west of the Tigris.

ASSYRIA

Was situated between the Tigris on the W., and Me'dia and Persia on the E.

TOWNS.—Nin'eveh, on the Tigris, founded by Ashur, to the inhabitants of which the prophet Jonah was sent to preach; Re'sen, on the Tigris, south from Nineveh; Ca'lah, still farther south on the Tigris.

PERSIA OR E'LAM, AND ME'DIA,

Were situated to the E. of Assyria.

TOWNS.—Shu'shan or Su'sa, the capital of Persia, on the U'lai, where Daniel had his vision of the Ram and He-Goat, and where the events related in the Book of Esther took place; Ach'metha or Ecba'tana, the capital of Media, where was found the decree of Cyrus for building the house of God at Jerusalem.

ASIA MINOR

Was bounded on the N. by the Eux'ine Sea; W. by the Propon'tis and Æge'an Sea; S. by the Mediterranean; E. by the Euphrates and Syria.

DIVISIONS.—Mys'ia, Lyd'ia, and Ca'ria, in the west; Lyc'ia, Pamphyl'ia, Pisid'ia, and Cilic'ia, in the south;

Cappado'cia, in the east; Pon'tus, Paphlago'nia, and Bithyn'ia, in the north; and Phryg'ia, Gala'tia, and Lycao'nia, in the centre.

MYRIA.—Tro'as, on the coast, where St Paul often preached, where he planted a church, and where he had a vision in the night of a man of Macedo'nia, who said, "Come over and help us;" As'sos, on the coast, south of Troas, where St Paul embarked for Jerusalem; Adramyt'tium, on the coast, east of Assos, in a ship belonging to which St Paul sailed for Italy; Per'gamos, in the south.

LYDIA.—Eph'esus, near the coast, to the Christians of which St Paul wrote an Epistle: here also was the famous temple of Diana; Smyr'na, on the coast, north from Ephesus; Sar'dis and Philadel'phia, east from Smyrna; Thyati'ra, in the north.

CARIA.—Mile'tus, in the north-west, on the coast, where St Paul sent for the elders of the church of Ephesus, to whom he gave solemn charges; Cni'dus, on the south-west coast, which St Paul passed on his way to Rome.

LYCIA.—Pat'ara, in the south, on the coast, where St Paul touched on his way from Macedonia to Jerusalem; My'ra, in the south, on the coast, where St Paul embarked in a ship of Alexandria for Italy.

PAMPHYLIA.—Per'ga, where Paul and Barnabas preached; Attali'a, whence St Paul sailed for Antioch.

PISIDIA.—An'tioch, where Paul and Barnabas preached till a persecution, stirred up by the Jews, obliged them to leave the place.

PHRYGIA.—Laodice'a, in the south-west; Colos'sa, near Laodicea, to the inhabitants of which St Paul addressed an Epistle from Rome; Hierap'olis, north of Laodicea.

LYCAONIA.—Ico'nium, Der'be, and Lys'tra, where Paul and Barnabas preached the Gospel: at Lystra, Timothy was born, and Paul and Barnabas healed a man who had

been lame from his birth: here they were taken for Mercury and Jupiter, and Paul was nearly stoned to death; Ephesus, Smyrna, Pergamos, Thyatira, Sardis, Philadelphia, and Laodicea, the towns in which were the seven churches mentioned in the Book of Revelation.

MACEDO'NIA

Was situated on the north of Greece.

Towns.—Neap'olis, on the south-east coast, where St Paul arrived from the island of Samothra'cia; Philip'pi, north-west of Neapolis, the first place in Europe where St Paul preached the Gospel: here he and Silas were miraculously set free from prison, on which occasion the jailor was converted with his whole house: to the inhabitants of this city St Paul addressed an Epistle; Amphip'olis and Appollo'nia, through which Paul and Silas passed after their deliverance from the prison at Philippi; Thessaloni'ca, on the coast, to the inhabitants of which St Paul wrote two Epistles: he was obliged to leave this city by night, on account of a tumult excited by the Jews; Bere'a, west of Thessalonica, where St Paul preached with great success; Nicop'olis, in the south-west, where St Paul wintered and wrote his Epistle to Titus.

GREECE.

Towns.—Ath'ens, in At'tica, the most celebrated city of antiquity for learning and the liberal arts: here St Paul preached and disputed with the philosophers, on which occasion, Dionysius the Areopagite, and a woman named Damaris, were converted among others; Cor'inth, in Acha'ia, where St Paul planted a church, and to the inhabitants of which he wrote two Epistles.

ITALY.

TOWNS.—Rhe'gium, on the south-west coast, at which St Paul touched on his voyage to Rome; Pute'oli, on the coast, where he spent seven days; Ap'pii Fo'rum, and The Three Taverns, where the Christians of Rome met St Paul; Rome, to the inhabitants of which St Paul wrote an Epistle: here he lived two years and preached the Gospel, and here he was afterwards beheaded.

ISLANDS IN THE MEDITERRANEAN SEA.

CYPRUS.—Sal'amis, on the east coast, where Paul and Barnabas preached; Pa'phos, on the west coast, where St Paul converted Sergius Paulus, the governor, and struck Elymas the sorcerer with blindness. **CRETE** (Candia).—Pheni'ce, on the south-west coast; and Lase'a, on the south coast, near the Fair Havens; Titus was the first bishop of Crete. **CLAU'DA**, south from Crete. **MEL'ITA** (Malta), south from Sicily, where St Paul and his companions were shipwrecked on their voyage to Rome: the natives imagined St Paul was a god, because he shook a viper off his hand without receiving any hurt from it: here he healed the father of Publius, who lay sick of a fever. **SICILY.**—Syr'acuse, on the south-east coast, at which St Paul tarried three days on his way to Rome.

ISLANDS IN THE ÆGEAN SEA.

Co'os and Rho'des, by which St Paul sailed on his voyage to Jerusalem; PAT'mos, whither St John was banished by Domitian, and where he wrote the Book of Revelation; SAM'os, north of Patmos; CHI'os, north-west of Samos; MITYLE'NE or LES'BOS, north of Chios, at which

St Paul touched as he sailed from Corinth to Jerusalem; SAMOTHRACIA, in the north of the Ægean Sea.

EXERCISES.—How was Palestine bounded? By what names is it called in Scripture? What were the Roman provinces, and how were they situated? Where did Elisha raise a young man from the dead? In what tribe was Jezreel situated? For what was it noted? For what was Nain remarkable? Where was St Matthew found sitting at the receipt of custom? Name the tribes among whom Palestine was divided? Tell their situations? By whom was Palestine originally inhabited? Where was Cesarea-Philippi situated? Where did Elijah raise the widow's son to life? By what name is the Mediterranean called in the Bible? How was Egypt bounded? By what river was it watered? What took place at Riblah? How was Syria or Aram bounded? From what place in Egypt did the Israelites take their departure? Where did they first set up their tents? Where were the disciples first called Christians? How was Arabia bounded? By what tribes was it inhabited? Name the places mentioned in the route of the Israelites. What towns were situated on the eastern gulf of the Red Sea? What remarkable event occurred at Meribah?

What was the capital of the ten tribes of Israel? How was Tiberias situated? Why was it so called? In what tribe was Cana of Galilee? For what was it noted? How was Galilee divided? Mention the tribes which it comprehended. What tribes were comprehended in Samaria? In the neighbourhood of what towns did our Saviour often preach and perform many miracles? Where was Joseph sold by his brethren? In what tribe and province was Dothan? For what was Nazareth noted? What tribes were comprehended in Judea? Where, and how, were Tyre and Sidon situated? For what were they famous? What town was the north-east border of Solomon's kingdom? Name the birthplace of Abraham. By whom was Babylon founded, and where was it situated? What took place on the banks of the river Chebar? Where was Mesopotamia situated? Where did Terah die? Where was Babylon situated? What was Jerusalem formerly called? Where was Assyria situated? Name the capital of the kingdom of Judah.

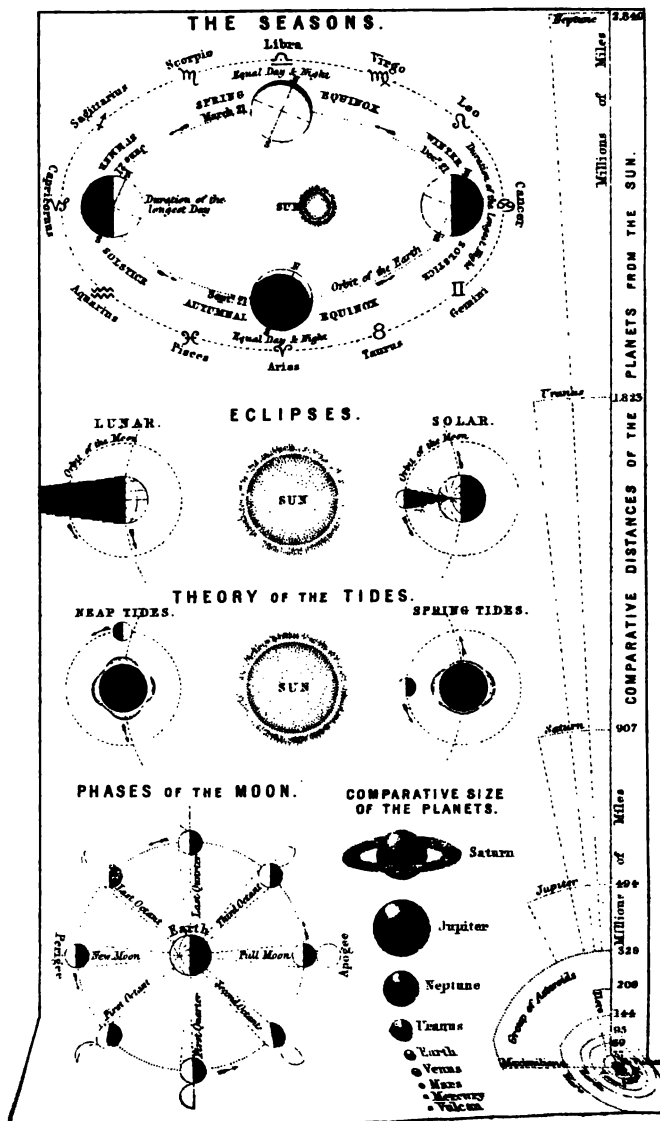
In what tribe was Ramah? For what was Cesarea remarkable? In what tribe and province was Emmaus? What occurred on the road to this place? Near what city was Jacob's well? What occurred there? For what was Shiloh remarkable? How long did the tabernacle remain at Shiloh? For what was Joppa or Jaffa noted? For what was Bethany noted? What was the circumference of Jerusalem? How many gates had it? Where were Bethany and Bethphage situated? Where did St Peter heal Enneas? What was his disease? In what tribe was Cesarea situated? Where were Persia and Media situated? For what was Ephesus noted? On what river was Nineveh situated? By whom was it founded? Which of the prophets was sent to preach to its inhabitants? What were the boundaries of Asia Minor? Name its divisions. At what

place had Daniel his vision? Where was Troas? What took place there? Name the capital of Media. What decree was found there? In what tribe was Sharon situated? By what other names was it known? For what was the district celebrated? For what was Luz or Bethel remarkable? On what occasion did the sun and moon stand still? Name the first city in Palestine taken by Joshua.

For what was Endor noted? Whom did Moses defeat at Jahaz? Where were the residence and burialplace of Samuel? What tribes were comprehended in Perea? Where was Askelon situated? For what was Bethabara noted? What other event occurred near this place? What remarkable event happened at Bethlehem? Name the towns in the Half Tribe of Manasseh, on the Sea of Galilee. Where did Abraham, Isaac, and Jacob dwell? Near what place did the angels appear to the shepherds? What occurred near Gadara? In what tribe was Hebron? Where did David conceal himself from Saul? Why was Mahanaim so called? Name the residence of Og, King of Bashan. For what was Kadesh-Barnea noted? Who was buried in Hebron? Of what city did Samson carry off the gates? In what tribe was Ramoth-Gilead? What event occurred there? What occurred at Makkedah? In what tribe was Heshbon? Where was Smyrna? What took place at Lystra? How was Miletus situated? When St Paul was there, for whom did he send? Whither was St Paul going when he touched at Patara? At what place did he embark for Italy? Where was Timothy born? Who preached at Perga? What obliged Paul and Barnabas to leave Antioch?

Where was Ashdod or Azotus situated? What famous temple stood there? Where was Lebanon situated? What is supposed of Mount Tabor? In what direction do the waters of Lebanon flow? For what was Bashan noted? What cities were situated in the district now occupied by the Dead Sea? For what was Bethshemesh in Judah remarkable? Name the mountains on which Jerusalem was built. What happened at Timnath? For what is Mount Ephraim noted? What occurred in the desert near Beersheba? In what tribe was Gath? Who belonged to this city? In what tribes were the two mountains called Carmel situated? Where did St Paul dispute with the philosophers? Who were converted on this occasion? Name the first place in Europe where St Paul preached the gospel. What events occurred there? How was Macedonia situated? What city was St Paul obliged to leave by night? On what account did he leave it? By what names is the Sea of Galilee called? Where was Hermon, Sirion, or Sion situated? What allusion is made to it in Scripture? Where was the valley of Elah situated? What happened there? What occurred near the waters of Merom?

For what is Moriah remarkable? What happened in the Kishon? Where was Joshua buried? What event took place on Carmel, in the north-west of Manasseh? In what tribe was the Cherith? What event occurred on the banks of this river? How was Mount Calvary situated? For what was it memorable? Of what tribes did the Kanaah form part of the boundary? In what tribe was the wood of Ephraim situated? For what was it remarkable? Through what tribe did the Gadara flow? What river forms the south-western boundary of Palestine? Into what does it flow? For what is Gilboa noted?



OUTLINES OF ASTRONOMY.

GENERAL VIEW OF THE SOLAR SYSTEM.

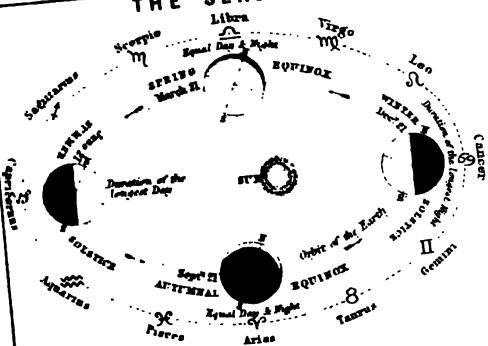
THE Solar System consists of the Sun, and the Planets and Comets which revolve round him. The Planets are distinguished into Primary and Secondary. The Primary Planets revolve round the sun as their centre of motion; the Secondary Planets, which are also called satellites or moons, revolve round their primaries, and are carried with them round the sun.

The number of the Primary Planets at present known is 99,—viz., VULCAN; MERCURY; VENUS; the EARTH; MARS; 90 ASTEROIDS (viz., VESTA, JUNO, CERES, PALLAS, FLORA, IRIS, METIS, HEBE, ASTRÆA, HYGEIA, etc.); JUPITER; SATURN; URANUS; and NEPTUNE. The number of the Secondary Planets is 22, of which 1, the MOON, belongs to the Earth, 4 belong to Jupiter, 8 to Saturn, 8 to Uranus, and 1 to Neptune.

All the planets, beside their diurnal rotation round their own axis from west to east,* have also a periodical revolution from west to east, round the sun, in orbits more or less elliptical—the Sun occupying one of the foci of the ellipse. The secondary planets describe orbits of the same kind, having their several primaries in one of the foci—the motions of all being from west to east, with the singular exception of the

* It has been ascertained from observations of spots on the surface of the sun, and several of the planets, that they revolve on their axes; and from certain regular changes in the brightness of the satellites of Jupiter and Saturn, corresponding to those of our moon, it is inferred that they revolve on their axes in the same time in which they revolve round their primaries, and always present the same side towards their primaries, in the same way as the moon always presents the same side towards her primary, the earth.

THE SEASONS.

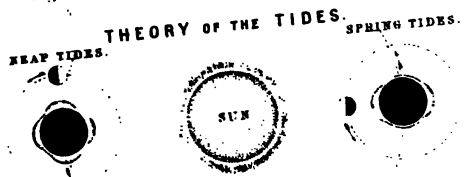


Distance from the Sun.
Millions of Miles.
186,000,000

ECLIPSES.



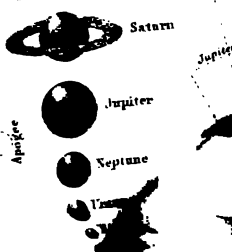
THEORY OF THE TIDES.



PHASES OF THE MOON.



COMPARATIVE SIZE OF THE PLANETS.



satellites of Uranus, whose motions round him are from east to west.

The planes in which the orbits of the planets are situated all pass through the centre of the sun, and are all inclined to each other at very small angles, with the exception of those of Juno, Ceres, and Pallas.

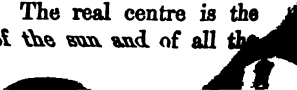
All the planets are oblate spheroids, that is, their equatorial diameters are a little longer than their polar axes or diameters, which is supposed to have been caused by their rapid rotation on their axes, when in a state of fluidity—a motion which, in such circumstances, would certainly cause an accumulation of matter in their equatorial regions.

They are all supposed to be similar to the earth in their composition, and it has been inferred that the greater number of them are similarly inhabited both by rational and by irrational beings, whose constitutions, and capacities for enjoyment, are adapted to their peculiar climate and atmosphere.

EXERCISES.—Of what does the solar system consist? How are the planets distinguished? What do the primary planets revolve round? What are the secondary planets called? What do they revolve round? What is the number of the primary planets now known? What is the number of the secondary planets? To what primary planets do they belong? In what direction do all the planets perform their diurnal revolutions round their own axes? In what direction are their periodical revolutions round the sun performed? Of what form are their orbits? What are the orbits and motions of the secondary planets? What singular exception is there to this motion? Through what do the planes in which the orbits of the planets are situated all pass? How are they all inclined to each other? Of what form are all the planets? By what is this form supposed to have been caused? What is supposed respecting the composition of the planets? What has thence been inferred?

THE SUN.

THE SUN, though not exactly, is very nearly, the centre of the Solar System. The real centre is the common centre of gravity of the sun and of all the



other bodies which compose the solar system, and round which the sun and these bodies revolve. The centre of the Solar System, owing to the immense quantity of matter contained in the sun, is never at a greater distance from the sun's centre than the length of his own diameter, and this only when all the planets are on one side of him; at other times the distance is much less, the centre being generally within his own body. The sun's diameter is about 887,000 miles, and he revolves on his axis in 25 days, 10 hours.

Dark spots are frequently seen upon the body of the sun, varying in number and magnitude, sometimes breaking up into two or more, at other times several uniting together. Some of these spots are much larger than the surface of the whole earth. They first make their appearance in the sun's eastern limb, and pass onward till they disappear at the western edge of his disc. Various conjectures have been formed regarding them.

Sir William Herschel thought that the body of the sun was similar to that of the planets, with a double atmosphere; that the outer atmosphere being luminous, diffused light and heat through the whole system; that the inner, consisting of dark clouds, protected the body of the sun from the heat of the luminous atmosphere; and that the spots were occasioned by separations in the luminous atmosphere, revealing the dark clouds below. Whatever may be the true explanation of the phenomenon, one thing is certain, it has enabled astronomers to determine accurately the time of the sun's revolution on his axis.

To a spectator on the earth or on any of the planets, the motions of the other planets appear sometimes eastward, sometimes westward; at other times the planets appear stationary: this arises from the combination of

the motion of the body on which the spectator is situated with the motion of the other bodies. Seen from the sun, all the motions of the planets are from west to east, and they present at all times towards the sun a full enlightened disc.

The weight of bodies at the surface of the sun is nearly twenty-eight times as great as at the earth's surface. The immense quantity of matter in the sun enables him, by the force of his attraction, to restrain all the other bodies in their spheres. Quickening their onward motion as they approach nearer to him, and gradually lessening it as they recede farther from him, they pursue their onward course, without any visible sign of deviation or decay, and can only be arrested or destroyed by that Almighty power which originally called them into existence.

EXERCISES.—Is the sun exactly the centre of the solar system? What is the real centre? What is the diameter of the sun? In what time does he revolve on his axis? What are frequently seen upon the body of the sun? Where do these spots first make their appearance? Where do they disappear? What did Sir William Herschel think of the body of the sun, and what of its atmosphere? How did he suppose the spots to be occasioned? What have these spots enabled astronomers to determine? How do the motions of the other planets sometimes appear to a spectator on the earth? Whence does this appearance arise? What are the motions and appearance of the planets as seen from the sun? How much greater is the weight of bodies at the surface of the sun than at the surface of the earth? What enables the sun to restrain all the other bodies in their spheres?

VULCAN, MERCURY, AND VENUS.

VULCAN, MERCURY, and VENUS, being nearer the sun than the earth is, are called *Inferior Planets*; all the others, being farther from the sun than the earth is, are called *Superior Planets*.

VULCAN, only recently discovered by astronomers in *France*, and as yet very imperfectly observed, revolves

round the sun at a distance of 14,008,000 miles, and in a period of 19 days and 17 hours.

Owing to the proximity of MERCURY to the sun, he can only be seen for a short time before the sun rises, or for a short time after the sun sets. This planet passes directly between the sun and the earth fourteen or fifteen times in a century, when he has the appearance of a dark spot moving across the sun's disc. This phenomenon is called a Transit, and occurs only in the months of May and November, as in these months the orbit of Mercury crosses the ecliptic at the sun's position.

The diameter of Mercury is 2950 miles; he revolves on his axis in 24 hours, 5 minutes, and 28 seconds; his distance from the sun is 35,000,000 miles; and the mean sidereal time of his annual revolution round the sun is 87 days, 23 hours, 15 minutes, and 44 seconds.

VENUS appears to us the largest and brightest of all the planets. She rises before the sun, when she is to the west of him, and is then called *Lucifer* or the morning star; she sets after the sun when she is to the east of him, and is then called *Hesperus* or the evening star.

Transits of Venus across the sun's disc occur much more rarely than transits of Mercury, and they afford the most exact method of ascertaining the distance between the earth and the sun.

The diameter of Venus is 7800 miles; she revolves on her axis in 23 hours, 21 minutes; her distance from the sun is 66,000,000 miles; and the time of her annual revolution is 224 days, 16 hours, 49 minutes, and 8 seconds.

Both Mercury and Venus, when viewed through a good telescope, exhibit phases similar to the moon—an incontestable proof that they are opaque bodies, and shine only by the reflected light of the sun.

EXERCISES.—What are Vulcan, Mercury, and Venus called, and why? What are the other planets called, and why? What is the distance of Vulcan from the sun? What is the time of his revolution round the sun? When only can Mercury be seen, and why? How often does he pass between the sun and the earth? What has he then the appearance of? When only does a transit of Mercury occur, and why? What is the diameter of Mercury? the time of his revolution on his axis? his distance from the sun? the mean sidereal time of his revolution round the sun?

How does Venus appear to us? When does she rise before the sun, and what is she then called? When does she set after the sun, and what is she then called? What do the transits of Venus afford? What is the diameter of Venus? the time of her revolution on her axis? her distance from the sun? the time of her annual revolution? What do Mercury and Venus, when viewed through a good telescope, exhibit? Of what is this an incontestable proof?

THE EARTH.

The EARTH is the fourth planet from the sun; its diameter is 7912 miles; it revolves on its axis in 23 hours, 56 minutes, 4 seconds, sidereal time; its distance from the sun is 92,000,000 miles; and the time of its mean sidereal revolution is 365 days, 6 hours, 9 minutes, 10 seconds.

EXERCISES.—Which is the fourth planet from the sun? What is its diameter? the time of its revolution on its axis? its distance from the sun? the time of its sidereal revolution?

MARS.

MARS, the first of the Superior Planets, is easily distinguished by his red and fiery appearance, occasioned, it is supposed, by the density of his atmosphere, through which the strong red rays of light only can penetrate. This planet is remarkable for bright spots round his poles, especially the south pole; they vary in appearance, being more brilliant as they are turned more towards the sun, and are supposed to be accumulations of ice or snow, made during the planet's long polar winter, and reflecting the sun's rays more powerfully *than the rest of the planet's body.*

The diameter of Mars is 4500 miles; he revolves on his axis in 24 hours, 37 minutes, 21 seconds; his distance from the sun is 140,000,000 miles; and the time of his annual revolution is 686 days, 23 hours, 30 minutes, 41 seconds.

EXERCISES.—Which is the next planet to the earth, and how is he distinguished? By what is his red and fiery appearance supposed to be occasioned? For what is this planet remarkable? What are these spots supposed to be? What is the diameter of Mars? the time of his revolution on his axis? his distance from the sun? the time of his revolution?

THE ASTEROIDS—VESTA, JUNO, ETC.

Between the planets Mars and Jupiter there is an immense space, about twice as great as the average interval between one planet and another. Here, therefore, a planet might be expected to exist. In place, however, of a single large planet, a number of very small ones have been discovered by the aid of the telescope, all circulating round the sun in orbits of nearly the same size, and at an average distance of 269 millions of miles.

They have sometimes been called Asteroids, sometimes Planetoids, but they are, perhaps, more generally known as the "Minor Planets." The largest of them is probably not more than two hundred miles in diameter, and is barely distinguishable, as a minute and faint star, by the naked eye in a very clear night; the smaller of them can only be distinguished in the same way by a powerful telescope; and it is suspected that there are still smaller ones which yet remain to be discovered.

The first four of the Minor Planets were discovered about the beginning of the present century, and received from their discoverers the names of Vesta, Juno, Ceres, and Pallas. At that number the group remained for more than thirty years; but the power of telescopes

having been increased, and more attention turned to the subject, no less than eighty-six more have been discovered since the year 1845.

The nearest to the sun of all the Minor Planets is Flora, which performs its orbit in 1193 days, at a mean distance from the sun of 209,819,000 miles.

The most distant is Maximiliana, whose period is 2343 days, and its distance 329,000,000 miles.

The brightest is Vesta; the faintest is Atalanta.

EXERCISES.—What general name is given to these planets? Between what large planets are they found? Was there any apparent reason for their being found there? How many of them are there known to be? When were they discovered, and how? What do they look like from the earth? What is their distance from the sun? What are the times of revolution of the nearest and of the farthest of them? Is the number discovered supposed to be the whole of the minor planets?

JUPITER.

JUPITER is the largest of all the planets, and notwithstanding his immense distance from the earth, he appears to us nearly as large and brilliant as Venus. His axis being nearly perpendicular to the plane of his orbit, he has no variety of seasons. When his longitude is less than that of the sun, he is a morning star, and appears in the east before sunrise; when his longitude is greater than the sun's, he is an evening star, and appears in the west after sunset. From his vast size, and the rapidity with which he revolves on his axis, his equatorial diameter is more than 6000 miles longer than his polar diameter.

When viewed through a telescope, several belts, varying in number and appearance, but all lying in the same direction, are observed on his surface. Some of these belts are dark, and others luminous; they have been supposed by some to be seas, but a more reasonable and *more general* supposition is, that they are occasioned

by clouds in his atmosphere, thrown into strata by trade-winds at his equatorial regions,—the dark belts being formed by the clouds, and the luminous belts by the body of the planet reflecting the rays of the sun more powerfully between the interstices of the clouds. From the great quantity of matter in this planet, he has considerable influence upon the motions of comets. This influence was exerted in a remarkable manner upon the comet of Lexell, which he detained for several months in his vicinity, changing its period from fifty years to five and a half years, and finally to twenty years, its present period. Bodies upon the surface of Jupiter weigh between two and three times more than upon the surface of the earth.

The diameter of Jupiter is 88,000 miles; he revolves on his axis in 9 hours, 55 minutes; his distance from the sun is 479,000,000 miles; and the time of his annual revolution is 4332 days, 14 hours, 2 minutes, and 9 seconds.

EXERCISES.—What is stated of this planet? Why has he no variety of seasons? When his longitude is less than that of the sun, what is he, and where does he appear? When his longitude is greater than the sun's, what is he, and where does he appear? How much is his equatorial diameter longer than his polar diameter? When viewed through a telescope, what are observed on his surface? What have these belts been supposed to be? What more reasonable supposition generally obtains? How are the dark and luminous belts supposed to be formed? On what account has this planet considerable influence upon the motions of comets? In what remarkable manner was this influence exerted? How much more do bodies upon the surface of Jupiter weigh than upon the surface of the earth? What is his diameter? In what time does he revolve on his axis? What is his distance from the sun? the time of his annual revolution?

SATURN.

SATURN appears of a dull golden hue, and when viewed through a telescope, presents the remarkable appendage of two rings revolving round him in the plane of his equator, *in about ten and a half hours*. The breadth of

the interior ring is about 17,000 miles, its distance from his centre about 60,000; the breadth of the exterior ring is about 10,000, its thickness 150, its distance from the interior ring about 2000 miles. When the plane of the rings is turned towards the earth, they appear as one—only a bright line, extending on both sides beyond the body of the planet, being seen. A third ring, inside of the others, and of a dull purplish hue, has been lately discovered. Various conjectures have been made regarding the use of these rings.

The diameter of Saturn is 73,000 miles; he revolves on his axis in 10 hours, 16 minutes; his distance from the sun is 876,000,000 miles; and the time of his annual revolution is 10,759 days, 5 hours, 16 minutes, 32 seconds.

EXERCISES.—What is the appearance of Saturn? When viewed through a telescope, what does he present? In what time do his rings revolve round him? What is the breadth of the interior ring? its distance from his centre? the breadth and thickness of the exterior ring? its distance from the interior ring? Where has a third ring been lately discovered? What is the diameter of Saturn? the time of his revolution on his axis? his distance from the sun? the time of his annual revolution?

URANUS.

URANUS is seldom visible to the naked eye. He is chiefly remarkable for the motion of his satellites, which, unlike that of all the other bodies of the Solar System, is from east to west, or contrary to the signs of the zodiac; and in a plane nearly perpendicular to the plane of the ecliptic.

The diameter of Uranus is 36,000 miles; he revolves on his axis in 1 day, 18 hours, 30 minutes; his distance from the sun is 1,765,000,000 miles; and the time of his annual revolution is 30,686 days, 17 hours, 42 minutes.

NEPTUNE.

NEPTUNE, the most distant planet yet discovered, is about 2,760,000,000 miles from the sun, and the time of his annual revolution is about 60,126 days, 17 hours.

THE MOON.

Of the Secondary Planets, LUNA, or the MOON, first deserves our attention.

Her axis is nearly perpendicular to the ecliptic; she can, therefore, have no diversity of seasons: and, as she revolves upon her axis in 29 days, 12 hours, 44 minutes, and 3 seconds, which is exactly the time of her synodic revolution, or from new Moon to new Moon, she always presents nearly the same face to the earth.

The diameter of the Moon is 2160 miles; her distance from the earth is 237,000 miles; her sidereal revolution round the earth is 27 days, 7 hours, 43 minutes, $11\frac{1}{2}$ seconds.

At the time of new Moon, or her conjunction with the sun (i.e. when she is between the earth and the sun), being an opaque body, that side which is turned towards the earth is not illuminated, and she is consequently invisible to us. In four days after her conjunction she is in her first octant, and is seen in the evening a little to the east of the sun, with her convex edge towards the west, and her horns or cusps towards the east. As she proceeds in her motion eastward, a greater portion of her disc gradually becomes enlightened, until, on the seventh day from her conjunction, when she comes to the meridian about six o'clock in the evening, she is said to enter into her second quarter, and has exactly the half of her disc illuminated. Advancing still towards the east, on the tenth day, she enters her

third octant, and appears gibbous, or with both sides convex. On the fourteenth day from new moon, when she enters into her third quarter, she comes to the meridian at midnight, and is directly in opposition to the sun; consequently the whole of her disc is illuminated, and she appears a complete circle, or is said to be full moon. Continuing her progress eastward, she again approaches the sun, exhibiting, in a reverse order, and upon her opposite limb, the phases just described, until, at the end of $29\frac{1}{2}$ days, she is again in conjunction with the sun.

EXERCISES.—Which of all the secondary planets first deserves our attention? Has she any diversity of seasons, and why? In what time does she revolve upon her axis? What other revolution does this correspond with, and of what is it the cause? What is the diameter of the moon? her distance from the earth? the time of her sidereal revolution round the earth? What is the position of the moon at the time of new moon? Which side of her is not illuminated? What is the consequence? In what time is she in her first octant? When, and where, is she then seen? What part is towards the west, and what towards the east? When, after her conjunction, does she come to the meridian? What does she then enter into, and what portion of her disc is illuminated? When does she enter her third octant, and how does she then appear? On what day does she enter into her third quarter, and at what hour does she come to the meridian? What is then her position, and what part of her disc is illuminated? Describe her further progress. When is she again in conjunction with the sun?

ECLIPSES.

ECLIPSES of the SUN can occur only at new moon, and are occasioned by the moon's concealing a portion of the sun's disc from a spectator at some particular place on the earth. Eclipses of the moon can occur only at full moon, and are caused by the moon's falling into the earth's shadow. If the plane of the moon's orbit, and the plane of the ecliptic coincided, the sun would be eclipsed at every new moon, and the moon would be eclipsed at every full moon; but as the moon's

orbit is inclined to the ecliptic at an angle of about five degrees, eclipses cannot occur when the moon's latitude is greater than $1^{\circ} 3'$ at the opposition, or greater than $1^{\circ} 34' 18''$ at the conjunction; the eclipse is certain if in the former case her latitude is less than $52'$, and in the latter case if it is less than $1^{\circ} 24'$, but between these limits the eclipse is uncertain.

When viewed through a telescope, the surface of the moon is found to be greatly diversified, and to have the appearance of high mountains and deep valleys. Some of the mountains look like volcanoes, and from careful measurement are reckoned to be at least as high as any upon the earth.

The moon has no atmosphere or clouds similar in quantity and density to those of the earth, or indeed at all approaching them. But certain very slight traces have occasionally been perceived of an extremely rare medium, which may answer some of the purposes of an atmosphere; and which, from the position of the moon's centre of gravity, is accumulated chiefly on that side of the moon which is generally turned away from the earth.

EXERCISES.—When only can eclipses of the sun occur? By what are they occasioned? When only can eclipses of the moon occur? By what are they caused? If the plane of the moon's orbit, and the plane of the ecliptic, coincided, what would be the consequence? What is the angle of inclination of the moon's orbit to the ecliptic? When cannot eclipses occur? When are they certain? What appearance has the moon when viewed through a telescope? What do some of the mountains exhibit? Has the moon an atmosphere?

JUPITER'S SATELLITES.

The Secondary Planets next to the moon in importance to the inhabitants of the earth, are the satellites of Jupiter, by means of whose eclipses the longitude of places on the earth's surface is most simply determined,

and from which also the rate of the velocity of light has been discovered. When Jupiter is in that part of his orbit which is nearest to the earth, an eclipse of any of his satellites is observed to commence and terminate sooner than the calculated time (the calculations being made for his mean distance); and when he is in the remotest part of his orbit, the eclipses are observed to commence and terminate later than the calculated time. These facts satisfactorily prove that light takes about eight minutes and a quarter in travelling a distance equal to that of the earth's distance from the sun, which is at the enormous speed of 190,000 miles in a second of time.

EXERCISES.—What are most simply determined by the eclipses of Jupiter's satellites? What has been discovered from these eclipses? What is observed when Jupiter is in that part of his orbit which is nearest to the earth? What are observed when he is in the remotest part of his orbit? What do these facts satisfactorily prove? At what rate of speed does light travel?

COMETS.

COMETS appeared to the ancient astronomers as a sort of erratic visitants of the Solar System, sent to foretell death, famine, pestilence, war, or other calamities; but the progress of science in modern times, combined with more accurate observation, has dispelled these illusions, and has fully proved that comets are permanent members of the system, regulated by the same laws as the earth and planets, but differing in the extreme eccentricity and inclinations of their orbits, and moving in all sorts of directions. They approach quite near the sun, and then move into illimitable space, far beyond the view of all the instruments which man has invented to explore the heavens. Their appearance is various: most of them have tails of prodigious length, supposed to consist of thin vapour emanating from the head, and *illuminated* by the heat of the sun; each has a more dense

part called the head or nucleus, but even this is so thin that stars of the sixth magnitude have been seen through it.

The number of comets recorded as having been seen is 350; of these, the elements of the orbits of 130 have been determined with considerable accuracy, and the periodical revolutions of three have been calculated with great precision. (1.) Halley's comet was observed in 1531 and 1607; its return, predicted by that astronomer in 1682, took place very nearly at the computed time; and the calculations of its return to its perihelion, in 1835, proved extremely near the truth. (2.) Encke's comet, which has a period of 1203 days, or about $3\frac{1}{2}$ years, has often returned to its perihelion exactly at the calculated time. The calculations of the periodical revolution of this comet are the more interesting, as they led to the inference that a certain resisting medium of extreme thinness pervades all space. (3.) The period of Gambart's or Biela's comet has been ascertained to be exactly $6\frac{7}{8}$ years.

EXERCISES.—As what did comets appear to the ancient astronomers? What has the science of modern times fully proved? In what do comets differ from the earth and planets? What is their appearance? Of what is the tail supposed to consist? What is the more dense part called? What have been seen through it? What number of comets has been seen? Of what number have the elements of the orbits been determined? In what years was Halley's comet observed? What did that astronomer predict? What calculations proved extremely near the truth? What is the period of Encke's comet? On what account are the calculations of the periodical revolution of this comet the more interesting? What is the period of Gambart's or Biela's comet?

FIXED STARS.

THE FIXED STARS are so named from their having been supposed in early ages always to retain the same relative position to each other. Their number appears to be indefinite, for with every new increase of the

power of the telescope, new stars are discovered which had previously escaped observation. The principal fixed stars are, for the sake of easy and popular distinction, divided into groups, called Constellations, which are named after some object or animal whose outline the configuration of the stars might be supposed rudely to resemble.

I. CONSTELLATIONS IN THE ZODIAC.

| CONSTELLATIONS. | Num- ber of Stars. | Names of the principal Stars, and their Magnitudes. |
|---|--------------------------|--|
| 1. Aries, <i>The Ram</i> , . . . | 66 | Arietes, 2. |
| 2. Taurus, <i>The Bull</i> , . . . | 141 | { Aldebaran, 1. The Pleiades. The Hyades. |
| 3. Gemini, <i>The Twins</i> , . . . | 85 | Castor and Pollux, 1. 2. |
| 4. Cancer, <i>The Crab</i> , . . . | 83 | Acubens, 4. |
| 5. Leo, <i>The Lion</i> , . . . | 95 | { Regulus, or Lion's Heart, 1. Deneb, 2. |
| 6. Virgo, <i>The Virgin</i> , . . . | 110 | { Spica Virginis, 1. Vindemiatrix, 4. |
| 7. Libra, <i>The Balance</i> , . . . | 51 | { Zubenel Chamali, 2. Zubenel Gemubi, 3. |
| 8. Scorpio, <i>The Scorpion</i> , . . . | 44 | Antares, 1. |
| 9. Sagittarius, <i>The Archer</i> , . . . | 69 | |
| 10. Capricornus, <i>The Goat</i> , . . . | 51 | Deneb Algedi, 4. |
| 11. Aquarius, <i>The Water-bearer</i> , . . . | 108 | Scheat, 3. |
| 12. Pisces, <i>The Fishes</i> , . . . | 113 | |

II. THE NORTHERN CONSTELLATIONS.

| | | |
|---|-----|---|
| 1. Mons Mænalus, <i>The Mountain</i> <i>Mænalus</i> , . . . | 11 | |
| 2. Serpens, <i>The Serpent</i> , . . . | 64 | |
| 3. Serpentarius, <i>The Serpent-bearer</i> , . . . | 74 | Ras Alhagus, 2. |
| 4. Taurus Poniatowski, <i>The Bull of</i> <i>Poniatowski</i> , . . . | 7 | |
| 5. Scutum Sobieski, <i>Sobieski's Shield</i> , . . . | 8 | |
| 6. Aquila et Antinous, <i>The Eagle</i> , . . . | 71 | Altair or Atair, 1. |
| 7. Equuleus, <i>The Little Horse</i> , . . . | 10 | |
| 8. Leo Minor, <i>The Little Lion</i> , . . . | 53 | |
| 9. Coma Berenices, <i>Berenice's Hair</i> , . . . | 43 | |
| 10. { Asterion et Chara, vel Canes } Venatici, <i>The Greyhounds</i> , . . . | 25 | |
| 11. Bootes, <i>The Drover</i> , . . . | 54 | Arcturus, 1. Mirach, 3. |
| 12. Corona Borealis, <i>The Northern</i> <i>Crown</i> , . . . | 21 | Alphecca, 2. |
| 13. { Hercules et Cerberus, <i>The</i> <i>three-headed Dog</i> , . . . | 113 | { Ras Algethi, 3, in head of Hercules. |

NORTHERN CONSTELLATIONS.

| | Num- ber of Stars. | Names of the principal Stars, and their Magnitudes. |
|---|--------------------------|--|
| 14. <i>Lyra, The Harp,</i> | 22 | Vega, 1. |
| 15. <i>Vulpecula et Anser, The Fox and the Goose,</i> | 37 | |
| 16. <i>Sagitta, The Arrow,</i> | 18 | |
| 17. <i>Delphinus, The Dolphin,</i> | 18 | |
| 18. <i>Pegasus, The Flying Horse,</i> | 89 | { Algenib, 2. Markab, 2. Scheat, 2. |
| 19. <i>Andromeda,</i> | 66 | Mirach, 2. Almaach, 2. |
| 20. <i>Triangulum, The Triangle,</i> | 11 | |
| 21. <i>Triangulum Minus, The Little Tri- angle,</i> | 5 | |
| 22. <i>Musca Borealis, The Northern Fly,</i> | 6 | |

The following Constellations do not set in the latitude of London.

| | | |
|---|----|--|
| 23. <i>Ursa Minor, The Little Bear,</i> | 24 | Pole Star, 2. |
| 24. <i>Ursa Major, The Great Bear,</i> | 87 | { Dubhe, 1. Alioth, 2. Benetnasch, 2. |
| 25. <i>Cor Caroli, Charles's Heart,</i> | 3 | |
| 26. <i>Draco, The Dragon,</i> | 80 | Etanin, 2. |
| 27. <i>Cygnus, The Swan,</i> | 81 | Deneb Adige, 1. |
| 28. <i>Lacerta, The Lizard,</i> | 16 | |
| 29. <i>Cepheus,</i> | 35 | Alderamin, 3. |
| 30. <i>Cassiopeia, The Lady in her Chair,</i> | 55 | Shedir, 3. |
| 31. { <i>Persæus et Caput Medusæ,</i> <i>Head of Medusa,</i> } | 59 | Algol, 2. |
| 32. <i>Camelopardalus, The Camelopard,</i> | 58 | |
| 33. <i>Auriga, The Charioteer or Waggoner,</i> | 66 | Capella, 1. |
| 34. <i>Lynx, The Lynx,</i> | 44 | |

III. THE SOUTHERN CONSTELLATIONS.

| | | |
|--|----|--|
| 1. <i>Cetus, The Whale,</i> | 97 | Menkar, 2. Mira, 3. |
| 2. <i>Eridanus, The River Po,</i> | 84 | Achernar, 1. |
| 3. <i>Orion,</i> | 78 | { Bellatrix, 2. Betelgeux, 1. Rigel, 1. |
| 4. <i>Monoceros, The Unicorn,</i> | 31 | |
| 5. <i>Canis Minor, The Little Dog,</i> | 14 | Procyon, 1. |
| 6. <i>Hydra,</i> | 60 | Cor Hydræ, 2. |
| 7. <i>Sextans, The Sextant,</i> | 41 | |
| 8. <i>Microscopium, The Microscope,</i> | 10 | |
| 9. <i>Piscis Notius vel Australis, The Southern Fish,</i> | 24 | Fomalhaut, 1. |
| 10. <i>Officina Sculptoris, The Sculptor's Shop,</i> | 12 | |
| 11. <i>Fornax Chemica, The Chemical Furnace,</i> | 14 | |
| 12. <i>Brandenburgium Sceptum, The Sceptre of Brandenburg,</i> | 3 | |
| 13. <i>Lepus, The Hare,</i> | 19 | |
| 14. <i>Columba Noachi, Noah's Dove,</i> | 10 | |
| 15. <i>Canis Major, The Great Dog,</i> | 31 | Sirius, 1. |

| SOUTHERN CONSTELLATIONS. | | Num- ber of Stars. | Names of the principal Stars, and their Magnitudes. |
|--|-----------------------------|--------------------------|--|
| 16. Pyxis Nautica, <i>The Mariner's</i> | <i>Compass,</i> | 4 | |
| 17. Machina Pneumatica, <i>The Air-</i> | <i>Pump,</i> | 3 | |
| 18. Crater, <i>The Cup or Goblet,</i> | | 31 | Alkes, 3. |
| 19. Corvus, <i>The Crow,</i> | | 9 | Algoreh, 3. |
| <i>The following Constellations do not rise in the latitude of London.</i> | | | |
| 20. Centaurus, <i>The Centaur,</i> | | 35 | |
| 21. Lupus, <i>The Wolf,</i> | | 24 | |
| 22. Norma vel Quadra Euclidis, | <i>Euclid's Square,</i> | 12 | |
| 23. Circinus, <i>The Compasses,</i> | | 4 | |
| 24. Triangulum Australe, <i>The South-</i> | <i>ern Triangle,</i> | 5 | |
| 25. Crux, <i>The Cross,</i> | | 6 | |
| 26. Musca Australis vel Apis, <i>The</i> | <i>Southern Fly or Bee,</i> | 4 | |
| 27. Chamaeleon, <i>The Chameleon,</i> | | 10 | |
| 28. Ara, <i>The Altar,</i> | | 9 | |
| 29. Telescopium, <i>The Telescope,</i> | | 9 | |
| 30. Corona Australis, <i>The Southern</i> | <i>Crown,</i> | 12 | |
| 31. Indus, <i>The Indian,</i> | | 12 | |
| 32. Grus, <i>The Crane,</i> | | 13 | |
| 33. Pavo, <i>The Peacock,</i> | | 14 | |
| 34. Apus vel Avis Indica, <i>The Bird</i> | <i>of Paradise,</i> | 11 | |
| 35. Octans Hadleianus, <i>Hadley's</i> | <i>Octant,</i> | 43 | |
| 36. Phoenix, | | 13 | |
| 37. Horologium, <i>The Clock,</i> | | 12 | |
| 38. Reticulus Rhomboidalis, <i>The</i> | <i>Rhomboidal Net,</i> | 10 | |
| 39. Hydrus, <i>The Water-snake,</i> | | 10 | |
| 40. Touchan, <i>The American Goose,</i> | | 9 | |
| 41. Mons Mensæ, <i>The Table Mountain,</i> | | 30 | |
| 42. Praxiteles vel Cela Sculptoria, <i>The</i> | <i>Engraver's Tools,</i> | 16 | |
| 43. Equuleus Pictorius, <i>The Painter's</i> | <i>Easel,</i> | 8 | |
| 44. Dorado vel Xiphias, <i>The Sword-Fish,</i> | | 7 | |
| 45. Argo Navis, <i>The Ship Argo,</i> | | 64 | Canopus, 1. |
| 46. Piscis Volans, <i>The Flying Fish,</i> | | 8 | |
| 47. Robur Caroli, <i>Charles's Oak,</i> | | 12 | |

The number of fixed stars visible without the aid of a telescope is not above 2000, and these have been divided into six classes, according to their brightness or apparent

magnitude. The brightest are called stars of the first magnitude; the next in order of brightness are called stars of the second magnitude, and so on to stars of the sixth magnitude. Stars which can only be seen by the aid of the telescope are called telescopic stars. The stars of the first magnitude are denoted in each constellation by the Greek letter α (alpha), those of the second magnitude by β (beta), and so on; the Arabic numerals are also used to denote the stars of different magnitudes.

NEBULÆ are whitish cloudy appearances in various parts of the heavens, which appear, from examination by the most powerful telescopes, generally to consist of the blended light of myriads of stars, at vast distances from the earth, and from each other.

The fixed stars are at such an immense distance from the earth, that its measurement, until very recently, defied all the means which astronomers could employ. The distance has at last been discovered in a few cases, by observing the parallax or apparent displacement in the direction in which any star is seen, first when the earth is on one side of its orbit round the sun, and then when it is on the other; these two positions giving a distance between them of 190 millions of miles, to be used as a base-line for determining the much greater distance of the stars.

This distance is indeed so much greater, that that base-line—the diameter of the earth's annual orbit—enormous as it is in miles, yet when viewed from the star alpha Centauri, now proved to be the nearest of all the stars, contracts into a point invisible to the naked eye, and even to many ordinary telescopes; the distance of that star having been ascertained to be 225,920 times as far as our earth from the sun; while light, though travelling at the immense speed of 192,000 miles in a second of time, would take three years and a half to *perform the journey*.

That the fixed stars are luminous bodies in themselves, similar to our sun, can scarcely admit of doubt, as, from their vast distance, they cannot be visible by his light reflected; and there is no other known source from which they could derive such illumination. As some of them, too, have been proved to be bodies as large, or even much larger than the sun, it has also been reasonably inferred that they are the centres of systems like our own, with similar planets revolving round them, teeming with animal and vegetable life.

Though their appearance and position have obtained for them the name of fixed stars, yet, remote as they are, attentive observation, aided by powerful instruments, has detected changes in the position and brilliancy* of some of them. Hence it has been thought that while the planets in each system revolve round their centres of motion, these systems themselves revolve round each other, and the whole revolve round a fixed point in space, which has been supposed by some to be the more immediate residence of the Deity. Such a view of the subject is certainly sublime. System upon system, unnumbered and numberless, wheeling their eternal course round the throne of the Most High, and obeying laws which nothing but the Almighty fiat can suspend or control, all contributing towards the glory of their Creator and Preserver, and towards the happiness and comfort of the myriads of beings by whom they are inhabited,—such a thought fills the mind with overwhelming ideas of the power, the wisdom, and the goodness of God.

* Some stars have appeared for a short time and then vanished; others mentioned in old catalogues of the stars are not now to be found; others, again, appear to change in brightness from stars of the second magnitude to stars of the fourth magnitude,—the star Algol, in Perseus, being an instance of this last kind. Double stars are such as appear only as one to the eye, but when viewed through a telescope are distinctly seen to be two; in some instances, these revolve round each other. Castor, the principal star in Gemini, is a double star, which completes its revolution in 252½ years; ζ in *Corvus Borealis* completes its revolution in 43½ years.

TABLE OF THE PRINCIPAL ELEMENTS OF THE SECONDARY PLANETS.

| Names. | Mean distance from Primary in English Miles. | Diameter in English Miles. | Sidereal Revolution round the Primary. | Eccentricity. | Mass, that of the Primary being Unity. | Inclination of Orbit to that of the Primary. |
|--------------------|--|----------------------------|--|--|--|---|
| The Moon, | 237,000 | 2,160 | D. H. M. S. 27 7 43 11.5 | 0.0549443 | 0.0125172 | 5° 8' 47.9" |
| Jupiter. | | | | | | |
| 1st Satellite, . . | 277,000 | 2,508 | 1 18 28 0.0 | Insen- sible. Small and variable. | 0.0000173 | 3 5 30.0 Variable. |
| 2d, | 440,000 | 2,068 | 3 13 14 0.0 | | 0.0000232 | |
| 3d, | 702,000 | 3,377 | 7 8 43 0.0 | | 0.0000395 | |
| 4th, | 1,235,000 | 2,390 | 16 16 32 0.0 | | 0.0000427 | |
| Saturn. | | | | | | |
| 1st Satellite, . . | 127,000 | ... | 0 22 38 0.0 | Orbits nearly circular. | ... | Orbits of the first six nearly in the plane of the ring; that of the eighth nearly coinci- dent with the ecliptic. |
| 2d, | 163,000 | ... | 1 8 53 0.0 | | ... | |
| 3d, | 201,000 | ... | 1 21 18 0.0 | | ... | |
| 4th, | 269,000 | ... | 2 17 45 0.0 | | ... | |
| 5th, | 862,000 | ... | 4 12 25 0.0 | | ... | |
| 6th, | 839,000 | ... | 16 22 41 0.0 | | ... | |
| 7th, | 1,110,000 | ... | 23 12 0 0.0 | | ... | |
| 8th, | 2,447,000 | ... | 79 7 56 0.0 | | ... | |
| Uranus. | | | | | | |
| 1st Satellite, . . | 128,000 | ... | 3 12 28 0.0 | Orbits nearly circular. | ... | Inclined about 78° 59' to the ecliptic; mo- tion retrograde. |
| 2d, | 179,000 | ... | 4 8 27 0.0 | | ... | |
| 3d, | 221,000 | ... | 5 21 25 0.0 | | ... | |
| 4th, | 237,000 | ... | 8 16 53 5.0 | | ... | |
| 5th, | 835,000 | ... | 10 23 4 0.0 | | ... | |
| 6th, | 883,000 | ... | 13 11 8 69.0 | | ... | |
| 7th, | 767,000 | ... | 38 1 48 0.0 | | ... | |
| 8th, | 1,534,000 | ... | 107 16 16 40.0 | | ... | |
| Neptune. | | | | | | |
| Satellite, | 290,000 | ... | 5 0 25 0.0 | ... | ... | Inclined about 35° to the eclip- tic; motion re- trograde. |

EXERCISES.—Why are the fixed stars so named? Why does their number appear to be indefinite? How are they classed for the sake of distinction? Name the constellations in the Zodiac. What are the principal stars in Taurus? in Leo? in Capricornus? in Libra? in Gemini? in Virgo? Name some of the northern constellations. What are the principal stars in Bootes? in Pegasus? in Andromeda? In what constellation is Vega? Ras Alhagus? Alphecca? Altair? Name some of the constellations which do not set in the latitude of London. In which constellation is Capella? Dubhe? Deneb Adige? Algol? Etanin? Alioth? Pole Star? Name some of the southern constellations. In which is Sirius? Femalhaut? Procyon? Rigel? Achernar? Menkar? Betelgeux? Name some of the constellations which do not rise in the latitude of London. In which is Canopus?

What number of fixed stars are visible without the aid of a telescope? Into how many classes are they divided? What are the brightest called? Which are called telescopic stars? How are stars of the different magnitudes denoted in each constellation? What are nebulae? Of what do they appear to consist when examined by the most powerful telescopes? What do we know regarding the distance of the fixed stars from the earth? Why are the fixed stars supposed to be luminous bodies? What has been reasonably inferred respecting them? Why is this inferred? By the aid of powerful instruments, what changes have been detected in some of the fixed stars? To what opinion has this led?

ASTRONOMICAL TERMS.

Attraction is that property in bodies by which they mutually tend towards each other.

Amplitude is an arc of the horizon, contained between the east or west points and the centre of the sun or a star, at its rising or setting.

Altitude is the height of the sun or a star above the horizon.

Azimuth is an arc of the horizon, contained between a vertical circle passing through a star and the north or south points of the horizon.

Antæci are those who live in the same degree of longitude, and in the same degree of latitude, but on opposite sides of the equator.

Periæci are those who live in the same latitude, but differ 180° in longitude.

Antipodes are those who live diametrically opposite to each other.

Perihelion is that point in the orbit of the earth, or of a planet, which is nearest to the sun.

Aphellion is that point in the orbit which is farthest from the sun.

Eccentricity of the orbit of any planet is the distance between the sun and the centre of the planet's orbit.

A Sidereal year is the time which the sun takes in moving from any fixed star till he returns to it again.

A Sidereal day is the time from the passage of any fixed star over the meridian till its return to that meridian.

The Culminating of a star or planet is when it comes to the meridian of any place.

EXERCISES.—What is attraction? amplitude? altitude? azimuth? antæci? pericæci? antipodes? perihelion? aphellion? eccentricity? a sidereal year? a sidereal day? the culminating of a star?

USE OF THE GLOBES.

THE TERRESTRIAL GLOBE.

THE Terrestrial Globe is an artificial representation of the Earth, with various circles for determining the position of places on its surface, and for other purposes. It is suspended on an axis in a brass ring, called the brass or universal meridian, and supported in a flat frame which represents the rational horizon, and which is divided into degrees, etc., numbered from 0° at the poles to 90° at the east and west points, and also from 0° at these points to 90° at the poles. The points of the compass, the months and days of the year, and the signs and degrees of the Ecliptic, in which the Sun is on each day, are likewise marked upon the horizon.

On the Globe are drawn the Equator, the Ecliptic, the Arctic and Antarctic Circles, the Tropics of Cancer and Capricorn, the Equinoctial and Solstitial Colures, Parallels of Latitude at equal distances, and Meridians at every 15th degree, or in some globes at every 10th degree.

The Brass Meridian is divided into degrees and parts of a degree, numbered on the upper half, from 0° at the equator to 90° at the poles, and on the under half, from 0° at the poles to 90° at the equator. The degrees on the equator are numbered both eastward and westward from the first meridian; the equator is also divided into twenty-four equal parts, corresponding to the hours of the day.

The Ecliptic is divided into twelve equal parts called signs, and each sign is subdivided into thirty degrees. The names of the signs, and the days of the month on which the Sun enters them, are—

♈ Aries, the Ram, March 21 or 22; ♉ Taurus, the Bull, April 19; ♊ Gemini, the Twins, May 20 (Spring signs); ♋ Cancer, the Crab, June 21; ♌ Leo, the Lion, July 22; ♍ Virgo, the Virgin, August 22 (Summer signs); ♎ Libra, the Balance, September 23; ♏ Scorpio, the Scorpion, October 23; ♐ Sagittarius, the Archer, November 22 (Autumnal signs); ♑ Capricornus, the Goat, December 21 or 22; ♒ Aquarius, the Water-Bearer, January 20; ♓ Pisces, the Fishes, February 19 (Winter signs). The first six are called northern signs, being on the north side of the equator; the last six, being on the southern side of the equator, are called southern signs. The Spring and Autumnal signs are called ascending signs, because the declination of the Sun increases while he is in them; the Summer and Winter signs are called descending signs, because the Sun's declination decreases while he is in them.

The Colures mark the seasons of the year, and divide the Ecliptic into four equal parts, in the first points of Aries, Libra, Cancer, and Capricorn.

The Hour Circle is a small brass circle, placed at the north pole of the Globe, divided into 24 equal parts, to represent the hours of the day, which again are subdivided into halves, quarters, etc. On some Globes the hour circle is fixed, and has a movable index; on others the hour circle is movable, and the brass meridian answers the purpose of an index.

The Quadrant of Altitude is a thin slip of brass, with a notch and screw to fix it on the brass meridian; it is divided from 0° to 90° in one direction, and from 0° to 18° in the other.

PROBLEMS ON THE TERRESTRIAL GLOBE.

PROB. I.—*To find the latitude and longitude of a place.*

RULE.—Bring the place to the brass meridian;—the degrees, etc., on the meridian, immediately above the place, show its latitude, and the degree of the equator cut by the meridian shows its longitude.

Ex.—What are the latitude and longitude of Rome, Constantina, and Calcutta? *Ans.*—Lat. $41^{\circ} 54'$ N., Long. $12^{\circ} 27'$ E.; Lat. $36^{\circ} 18'$ N., Long. $6^{\circ} 28'$ E.; Lat. $22^{\circ} 34'$ N., Long. $88^{\circ} 26'$ E.

Find the latitude and longitude of Paris, Edinburgh, Dublin, Pekin, Sydney, Cairo, Ispahan, St Petersburg, Mexico, Monte Video.

PROB. II.—*Given the latitude and longitude of a place, to find it on the globe.*

RULE.—Turn the globe till the given longitude on the equator comes to the brass meridian;—under the given latitude is the place required.

Ex.—What places are in Lat. $46^{\circ} 49'$ N., Long. $71^{\circ} 16'$ W.; Lat. $42^{\circ} 53'$ S., Long. $147^{\circ} 25'$ E.; Lat. $39^{\circ} 54'$ N., Long. $116^{\circ} 28'$ E.? *Ans.*—Quebec, Hobart Town, and Pekin.

Find the places whose latitudes and longitudes are Lat. $16^{\circ} 50'$ N., and Long. $99^{\circ} 49'$ W.; Lat. $41^{\circ} 43'$ N., Long. $26^{\circ} 30'$ E.; Lat. $7^{\circ} 56'$ S., Long. $14^{\circ} 24'$ W.; Lat. $25^{\circ} 15'$ S., Long. $57^{\circ} 35'$ W.; Lat. $21^{\circ} 50'$ N., Long. $95^{\circ} 50'$ E.; Lat. $3^{\circ} 48'$ S., Long. $109^{\circ} 10'$ E.; Lat. $36^{\circ} 32'$ N., Long. $6^{\circ} 17'$ W.; Lat. $51^{\circ} 7'$ N., Long. $1^{\circ} 18'$ E.

PROB. III.—*To find the distance between any two given places.*

RULE.—Lay the quadrant of altitude over the two given places, so that the zero or 0° shall be on the one;—the number over the other will show their distance in degrees; multiply this by $69\frac{1}{2}$, to bring it to English, or by 60 to bring it to geographical miles. When the distance is more than 90° , stretch a thread from the one place to the other, and find the number of degrees on the equator.

Ex.—What is the distance between London and Constantinople? Constantinople and Teheran? Calcutta and Pekin? *Ans.*— $22\frac{1}{2}^{\circ}$, $17\frac{3}{4}^{\circ}$, and $29\frac{1}{2}^{\circ}$, or 1350, 1065, and 1770 geographical miles.

Find the distance between London and Calcutta, London and Quebec, London and Pekin, London and the Cape of Good Hope, Paris and St Petersburg, Paris and Tobolsk, Rome and Cairo, Rome and Mecca, Edinburgh and Quebec, Edinburgh and Berlin.

PROB. IV.—*Given the hour of the day at one place, to find the hour at any other place.*

RULE.—Bring the place of which the hour is given to the brass meridian, and set the hour circle to 12, then turn the globe till the other place comes to the meridian;—the hours passed over on the circle show the difference of time between the two places. If the place is to the east of that at which the hour is given, add the hours passed over, if otherwise, subtract them from the hour at the other place.

Ex.—When it is six o'clock at London, what is the time at Alexandria and at Quebec? *Ans.*—At Alexandria, eight o'clock, and at Quebec, 1 h. 15 m.

Find the time at Teheran, Mecca, Gondar, Morocco, Mexico, Lima, Bahia, and Havannah, when it is ten o'clock at London, when it is 12 o'clock at Paris, and when it is 6 o'clock at Rome.

PROB. V.—*To find the Antæci, Periæci, and Antipodes to the inhabitants of any place.*

RULE I.—Bring the place to the brass meridian, and observe its latitude;—in the opposite hemisphere, under the same degree of latitude, you will find the Antæci.

RULE II.—Bring the given place to the brass meridian, and set the hour circle to 12; turn the globe till the index points to the other 12,—then under the latitude of the given place, in the same hemisphere, you will find the Periceci, and in the opposite hemisphere under the same latitude you will find the Antipodes.

Ex.—Find the Antœci, Periceci, and Antipodes, to the inhabitants of Madrid. *Ans.*—Antœci, Gough's Isle in the Atlantic Ocean; Periceci, a point in the North Pacific; and Antipodes, Cape Turnagain, in New Zealand.

Find the Antœci, Periceci, and Antipodes to the people of Edinburgh, Oporto, Pekin, Mexico, Valdivia, Cairo, and London.

PROB. VI.—*To rectify the globe for any given place.*

RULE.—Elevate the North or South Pole, according as the given place is north or south of the equator, till its height above the horizon is equal to the latitude of the place.*

Ex.—Rectify the globe for Dublin, for Edinburgh, and for Hobart Town. *Ans.*—For Dublin, elevate the North Pole $53^{\circ} 23'$ above the horizon; for Edinburgh, elevate the North Pole $55^{\circ} 57'$ above the horizon; and for Hobart Town, elevate the South Pole $42^{\circ} 53'$ above the horizon.

Rectify the globe for Cairo, Cape of Good Hope, Calcutta, Mexico, Rome, Valparaiso, Manilla, Pekin, Rangoon, and Tobolsk.

PROB. VII.—*To find the sun's place in the ecliptic, and his declination for any given day.*

RULE.—Find the day of the month on the wooden horizon, against which, in the adjoining circle of signs, will be found the sign and degree in which the sun is for that day. Bring the same sign and degree of the ecliptic to the brass meridian,—and the degree, etc., on the meridian immediately over the sun's place is the declination.†

Ex.—What is the sun's place in the ecliptic, and his declination, on 31st August, and 25th December? *Ans.*—Virgo 8° , dec. $8^{\circ} 40'$ N.; and Capricorn 4° , dec. $23\frac{1}{2}^{\circ}$ S.

* The globe should also be set due north and south, and it will then be in a position exactly similar to that of the earth itself.

† This problem may also be performed on the celestial globe, using the same rule.

Find the sun's place in the ecliptic, and his declination, on the 10th and 20th day of each month of the year.

PROB. VIII.—*Given a place in the torrid zone, to find on what two days of the year the sun will be vertical there.*

RULE.—Find the latitude of the place (Prob. I.); turn the globe, and observe what two points of the ecliptic pass under that latitude; find these two points in the circle of signs on the wooden horizon,—and opposite to them are the days required.

Ex.—On what two days of the year will the sun be vertical at Manilla and at Bombay? *Ans.*—On April 29th and August 13th at Manilla; and on May 15th and July 28th at Bombay.

On what two days will the sun be vertical at Batavia, Bencoolen, Quito, Singapore, Havannah, Sierra Leone, and Madras.

PROB. IX.—*Given the day and month at any place (not in the frigid zones), to find what other day of the year is of the same length.*

RULE.—Bring the sun's place in the ecliptic for the given day to the brass meridian, and note the degree above it; turn the globe till some other point of the ecliptic falls under the same degree of the meridian; then find this point of the ecliptic on the horizon,—and directly opposite to it is the day of the month required.

Ex.—What other days of the year are of the same length, at Edinburgh, as May 25th and August 5th? *Ans.*—July 17th and May 7th.

What other days of the year are of the same length, at Paris, as February 15th, April 20th, July 30th, October 1st, November 29th, and December 4th?

PROB. X.—*Given the place, day of the month, and hour, to find where the sun is then vertical.*

RULE.—Find the sun's declination for the given day; bring the given place to the brass meridian, and set the hour circle to the given hour; turn the globe till the index points to 12 noon,*—then, exactly under the degree of the sun's declination on the meridian, is the

* If the time given be before noon, turn the globe westward to 12, otherwise turn it eastward.

place which has the sun vertical at the given hour, and all the other places under the meridian have noon.

Ex.—At what place is the sun vertical on the 7th January, when it is 9h. m. and 4h. a. at Edinburgh? *Ans.*—In Lat. $22\frac{1}{2}^{\circ}$ S., Long. $41\frac{1}{2}^{\circ}$ E., or very near St Felix, in Madagascar; Lat. $22\frac{1}{2}^{\circ}$ S., Long. 63° W., or a little to the N.W. of St Jago, in La Plata.

Where is the sun vertical on the 1st March and the 22d June, when it is 8 and 10 o'clock m. and 2 and 4 o'clock a. at London? at St Petersburg? at Calcutta? and at New York?

PROB. XI.—*Given the place, day of the month, and hour, to find where the sun is then rising and setting, where it is noon or midnight, and where it is evening or morning twilight.*

RULE.—Find the place to which the sun is vertical at the given hour; rectify the globe for the latitude of this place, and bring it to the brass meridian;—the sun is rising to all those places on the western edge, and setting to all those on the eastern edge of the horizon; it is noon to all those places under the upper half of the meridian, and midnight to all those under the lower half; all places 18° below the western edge of the horizon have morning, and all 18° under the eastern edge have evening twilight.

Ex.—When it is 5 o'clock m. at Edinburgh on the 10th February, to what places is the sun rising, setting, etc.? *Ans.*—Rising to Tver, Kiev, Adrianople, the Archipelago, Derna, Lake Tchad, and Loango; setting to Agattou Island, Lisiansky's Island, and 166° W. on the equator; noon at the eastern part of Sumatra, Johr, Pontiana, Tching-tou, Irkutsk; and midnight at Washington, Kingston, Jamaica, and Lima.

When it is 4, 7, and 10 o'clock m. and 5, 8, and 11 o'clock a. on April 15th and May 26th, at Edinburgh, Dublin, St Petersburg, and Rome, to what places is the sun rising, setting, etc. etc.

PROB. XII.—*Given any place (not in the frigid zone), and the day of the month, to find the time of sun rising and setting, and the length of the day and night.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic for the given day to the brass meridian, and set the hour circle to 12; turn

the globe till the sun's place comes to the eastern edge of the horizon,—and the index will show the hour of sun-rising, which taken from 12 will show the hour of his setting; double the hour of setting gives the length of the day, and double the hour of rising gives the length of the night.

Ex.—At what hour does the sun rise, etc. etc., at Edinburgh, on 10th May? and at Paris, on 15th August? *Ans.*—At Edinburgh, rises 4h. 5m. M., sets 7h. 55m. A.; length of day, 15h. 50m.; length of night, 8h. 10m. At Paris, rises at 4h. 55m. M., sets at 7h. 5m. A.; length of day, 14h. 10m.; length of night, 9h. 50m.

At what time does the sun rise, etc. etc., at Madrid, Oporto, Berlin, Cairo, Brussels, Stockholm, and Constantinople, on 21st October, 15th December, 19th February, and 25th May?

PROB. XIII.—*Given the day of the month, to find all those places to which the sun is vertical on that day.*

RULE.—Bring the sun's place in the ecliptic on the given day to the brass meridian, turn the globe,—and all those places which pass under the degree of the sun's declination have the sun vertical on that day.

Ex.—To what places is the sun vertical on Aug. 1st, Sept. 29th, and Feb. 20th? *Ans.*—To all places whose Lat. is 18° N., $2^{\circ} 45'$ S., and 11° S.

To what places will the sun be vertical on the 10th and 20th of each month of the year?

PROB. XIV.—*Given the place and day of the month, to find on what point of the compass the sun rises and sets.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic on the given day to the eastern, and also to the western edge of the wooden horizon,—and the points which it cuts on the circle of rhumbs are the points required.

Ex.—On what points of the compass does the sun rise and set at Edinburgh on 11th Nov. and 22d March? *Ans.*—Rises S.E. by E. 33° , sets S.W. by W. 33° ; rises E. by N. $1\frac{1}{2}^{\circ}$, sets W. by N. $1\frac{1}{2}^{\circ}$.

On what points of the compass does the sun rise and set at London, Quebec, New York, Mexico, Pekin, and Calcutta, on 24th June, 26th August, 25th December, and 22d February?

PROB. XV.—*To find the sun's meridian altitude at any given place.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic on the given day to the brass meridian,—and the number of degrees between it and the horizon is the sun's meridian altitude.

Ex.—What is the sun's meridian altitude at Paris on 1st May, and 25th December? *Ans.*— $56^{\circ} 15'$, and $17^{\circ} 30'$.

Find the meridian altitude of the sun at Rome, Madrid, Tunis, Sydney, Pekin, and Rio Janeiro, on 1st June, 20th August, 30th October, 25th December, and 14th February.

PROB. XVI.—*To find the sun's amplitude at any place on a given day.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic on the given day to the eastern edge of the horizon, and also to the western edge;—the number of degrees from the sun's place to the east point of the horizon is the amplitude at rising, the number of degrees to the west point is the amplitude at setting.

Ex.—What is the sun's amplitude at Edinburgh on 22d June? *Ans.*—At rising 45° , and at setting 45° .

What is the sun's amplitude at Berlin, Paris, Vienna, Athens, and Cairo, on 1st August, 25th January, and 1st May?

PROB. XVII.—*Given the place, day of the month, and hour, to find the sun's azimuth and altitude.*

RULE.—Rectify the globe for the latitude of the place, and fix the quadrant of altitude upon the degree of latitude on the brass meridian; bring the sun's place in the ecliptic on the given day to the brass meridian, and set the index to 12; if the time given be before noon, turn the globe eastward, otherwise turn it westward, as many hours as the given time is from noon; then lay the graduated edge of the quadrant over the sun's place;—the number of degrees on the horizon, reckoned from the north or south pole, to the edge of the quadrant, shows the sun's azimuth; and the number

of degrees on the quadrant, between the horizon and the sun's place, shows his altitude.

Ex.—What is the sun's azimuth and altitude at Edinburgh at 10 o'clock M. and 4 o'clock A., on July 21st? *Ans.*—Az. 45° from the south, alt. $47^{\circ} 45'$; az. 76° from the south, alt. 33° .

Required the sun's azimuth and altitude when it is 9 o'clock M. and 1 o'clock A. at London, Moscow, Bombay, Singapore, Lima, and Mexico, on the 24th August, and 11th November?

PROB. XVIII.—*Given the place, and day of the month, to find at what hour the sun is due east and due west.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place on the ecliptic on the given day to the brass meridian, and set the hour circle to 12; screw the quadrant of altitude upon the degree of latitude on the brass meridian, and move the other end of it to the east point of the horizon; then turn the globe till the sun's place comes in contact with the graduated edge of the quadrant,—and the hours passed over on the hour circle show the time, from noon, when the sun is due east or west.*

Ex.—At what time is the sun due east or west at London on 10th June? *Ans.*—Due east at 7h. 30m. M., due west at 4h. 30m. A.

At what time is the sun due east or west at Copenhagen, Stockholm, Christiania, Berlin, Brussels, Vienna, and Naples, on 26th May, 29th June, 16th July, 28th August, and 25th December?

PROB. XIX.—*Given the sun's meridian altitude, and the day of the month, to find the latitude of the place.*

RULE.—Bring the sun's place on the ecliptic on the given day to the brass meridian; then if the sun was south of the observer when the altitude was taken, count the number of degrees of altitude from the sun's place on the brass meridian, towards the south point of the horizon, and bring the point where the reckoning ends to the south point of the horizon,—and the elevation of the north pole shows the latitude. If the sun

* If the latitude of the place and the sun's declination are both north or both south, the sun will be due east and due west when he is above the horizon; but if the one be north and the other south, then the sun is below the horizon.

was north of the observer when the altitude was taken, the degrees of altitude must be counted towards the north point of the horizon,—and the elevation of the south pole will show the latitude.

Ex.—On 10th of June the sun's meridian altitude was observed at two places to be 56° and 74° , the sun being south of the observer,—required the latitude of the places? *Ans.*— 57° N., and 39° N.

On 1st September, the sun's meridian altitude was observed at several places to be 20° , 30° , 40° , and 50° , the sun being south of the observer, and at other places it was observed to be 25° , 37° , 46° , and 56° , the sun being north of the observer,—required the latitudes?

PROB. XX.—*Given the place, day of the month, and hour, when a solar or lunar eclipse will happen, to find all the places to which it will be visible.*

RULE.—Rectify the globe for the latitude of the place to which the sun is vertical at the given time, and bring the given place to the meridian,—then at all places within 70° of this place a total eclipse of the sun may be visible.* For a lunar eclipse, after rectifying the globe as before, and bringing the given place to the brass meridian, set the hour circle to 12, and turn the globe till the index has passed over 12 hours; if the sun's declination is north, elevate the south pole so many degrees above the horizon as are equal to the declination, otherwise elevate the north pole;—then to all places above the horizon the eclipse will be visible.

Ex.—There was an eclipse of the moon, Jan. 26, 1842, Greenwich mean time of opposition 6h. 6m. A.,—to what places was it visible? *Ans.*—The whole of Europe, Asia, Australasia, nearly the whole of Africa, and the Russian territories in North America, the line of visibility cutting the equator in 1° of W. Long., and 179° of E. Long.

Three eclipses of the sun occurred in 1842, viz. on January 11, July 8, and December 31, the Greenwich mean times of the conjunctions were respectively 3h. 58m. A., 6h. 55m. M., and 7h. 1m. A.,—to what places might they have been visible? On July 22, 1842, there was an eclipse of the moon, Greenwich mean time of opposition 11h. 18½m. M.,—to what places was it visible?

* Owing to the effect of parallax, an eclipse of the sun may not be visible, even where the sun is vertical. The greatest breadth of the earth's surface under the penumbral shadow of the moon is $70^{\circ} 20'$, but unless the varying breadth of this shadow be determined by calculation, it is not possible to tell by the globe all the places at which a solar eclipse will be visible.

PROB. XXI.—*To find how long the sun shines without setting in any place of the north frigid zone, and how long he is totally absent.*

RULE.—Bring the given place to the northern point of the horizon; count, from the equator towards the north on the brass meridian, the number of degrees that the given place is distant from the north pole, and mark where the reckoning ends; turn the globe, and observe what two points of the ecliptic pass under the place marked; then find these two points of the ecliptic in the circle of rhumbs on the horizon, and exactly opposite to them, in the circle of months, will be found the days on which the longest day begins and ends. In finding the length of the longest night, the number of degrees that the place is distant from the north pole must be counted from the equator towards the south pole.*

Ex.—What is the length of the longest day and longest night at the North Cape in Lapland? *Ans.*—The longest day begins on May 15 and ends on July 28, its length is therefore 74 days; the longest night begins on Nov. 14 and ends on Jan. 27, its length is therefore 74 days.

Find the length of the longest day and longest night at Cape Severo, Franklin's Bay, Melville Island, the northern point of Spitzbergen, the northern point of Nova Zembla, and Barrow's Straits.

PROB. XXII.—*Given the place, and the day of the month, to find the beginning, end, and duration of twilight.*

RULE.—Rectify the globe for the latitude of the place, bring the sun's place in the ecliptic on the given day to the brass meridian, set the hour circle to 12, and fix the quadrant of altitude upon the degree of latitude on the brass meridian; turn the globe westward till the sun's place comes to the edge of the horizon,—and the hours passed over on the hour circle will show the time of the sun setting, or the beginning

* The longest day always begins before the 21st of June and ends after it; and the longest night begins before the 21st or 22d of December and ends after it. The converse of the problem answers for places in the south frigid zone.

of the evening twilight: continue the motion of the globe till the sun's place comes to 18° on the quadrant of altitude, below the horizon,—then the time on the hour circle shows when the twilight ends; the difference between which and the time of sunset is the duration of twilight. The beginning, etc., of morning twilight is found by turning the globe eastward.

Ex.—At what time does twilight begin, etc., at Edinburgh on 25th April? *Ans.*—Begins at 1h. 33m., ends at 4h. 36m. morning; begins at 7h. 24m., ends at 10h. 27m. evening; its duration is therefore 3h. 3m.

At what hour does twilight begin, etc., at London, Berlin, Paris, Madrid, Morocco, Cairo, Pekin, Hobart Town, and Quebec, on 22d March, 25th October, and 25th December?

THE CELESTIAL GLOBE.

The Celestial Globe is an artificial representation of the heavens, on which the stars are accurately laid down; it can receive a motion like the apparent diurnal motion of the stars, from east to west, and the spectator is supposed to be situated at its centre. It is suspended in a brass meridian, and supported on a wooden horizon, like the Terrestrial Globe.

The first point of Aries and the first point of Libra, in which the Ecliptic cuts the Equinoctial or Celestial Equator, are called the Equinoctial Points. The former, in which the Sun appears to cross northwards, is called the Vernal Equinoctial Point; the latter, in which he appears to cross southwards, is called the Autumnal Equinoctial Point. When the Sun is in either of these points, the day in every part of the earth is of the same length as the night.

The Solstitial Points are, the first Point in Cancer, and the first Point in Capricorn. When the Sun enters Cancer we have our longest day, and the Summer Solstice commences; when he enters Capricorn we have our shortest day, and the Winter Solstice commences.

The Declination of a heavenly body is its distance in degrees, north or south from the Equinoctial; and its Right Ascension is its distance, measured on the Equinoctial, from the first point of Aries to the point cut by a Great Circle drawn through the body, and perpendicular to the Equinoctial.

The Latitude of a heavenly body is the distance between it and the Ecliptic, measured upon a great circle, drawn through the body, and perpendicular to the Ecliptic; and the Longitude is its distance from the first point of Aries, to the point in which this circle cuts the Ecliptic. The Sun, being always in the Ecliptic, has no latitude.

The days of the month are marked on one side of the Ecliptic, and the signs and degrees of the Zodiac on the other side.

The Zodiac is a belt or zone which extends about 8° on each side of the Ecliptic, within which all the larger planets move.

PROBLEMS ON THE CELESTIAL GLOBE.

PROB. I.—*To find the right ascension and declination of the sun or a star.*

RULE.—Bring the sun's place or the star to the brass meridian,—the degree on the equinoctial cut by the meridian is the right ascension, and the degree on the brass meridian is the declination.

Ex.—What is the right ascension and declination of the sun on 15th May, and of Regulus, in Leo? *Ans.*—Sun's R. A. 3h. 30m., dec. 19° N.; R. A. of Regulus 9h. 57m., and his dec. 13° N.

Required the right ascension and declination of the sun on the 1st August, 25th December, 31st March, and 15th May; and of Castor, in Gemini; Altair, in Aquila; Alphecca, in Corona Borealis; Rigel and Betelgeux, in Orion; and Arcturus, in Bootes.

PROB. II.—*To find the latitude and longitude of a star.*

RULE.—Bring the north or south pole of the ecliptic into the zenith, according as the star is on the north or

south side of it; fix the quadrant of altitude over the pole of the ecliptic, and lay its graduated edge over the star,—then the degrees between the edge of the quadrant and the first point of Aries show the longitude, and the degrees between the ecliptic and the star show the latitude.

Ex.—Required the latitude and longitude of Aldebaran, in Taurus, and of Pollux, in Gemini. *Ans.*—Lat. $5^{\circ} 30'$ S., Long. $2s. 6^{\circ} 54'$; Lat. $6^{\circ} 30'$ N., Long. $3s. 21^{\circ}$.

Required the latitude and longitude of Dubhe, in the Great Bear; Markab, in Pegasus; Deneb, in Capricornus; Achernar, in Eridanus; Fomalhaut, in Piscis Australis; and of Sirius, in Canis Major.

PROB. III.—*Given the place, day of the month, and hour, to find what stars are rising, culminating, and setting.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic on the given day to the brass meridian, and set the hour circle to 12: turn the globe eastward or westward, according as the time is before or after noon, till the index points to the given time,—then all the stars on the eastern edge of the horizon will be rising, those under the brass meridian culminating, and those on the western edge of the horizon setting, all above the horizon will be visible, and all under it invisible.*

Ex.—At Edinburgh, on the 10th January, at 10 o'clock A., what stars are rising, what are culminating, and what are setting?

Ans.—Rising, Mirach in Bootes, Vindemiatrix in Virgo; culminating, α in Lepus, the stars in Orion's belt, and ζ in Taurus; setting, γ in Pisces, ζ in Pegasus, and 23 in Anser et Vulpecula.

What stars, at Edinburgh, Paris, Rome, Cairo, and the Cape of Good Hope, are rising, culminating, and setting, on March 1st, May 20th, August 27th, October 25th, and December 25th, at 2 and 4 o'clock M., and at 9 and 11 o'clock A.

PROB. IV.—*Given the latitude of the place, and the day of the month, to find the time when any star or planet rises, culminates, or sets.*

RULE.—Rectify the globe for the latitude of the place, bring the sun's place in the ecliptic on the given day to the brass meridian, and set the hour circle to 12; turn the globe till the given star or the planet's place comes

* If the globe be set exactly north and south, it will represent the face of the heavens at the given time.

to the eastern edge of the horizon,—the index will show the time of rising: bring the star or planet's place to the brass meridian,—the index will show the time of its culmination: bring it to the western edge of the horizon,—and the index will show the time of its setting.*

Ex.—Find the times, at Edinburgh, of the rising, etc., on the 27th November 1859, of the planet Jupiter, and also of Aldebaran?
Ans.—Jupiter rises at 2h. 45m. A., culminates at 9h. 57m. A., and sets at 4h. 55m. M. Aldebaran rises at 4h. 30m. A., culminates at 1h. 30m. M., and sets at 7h. 45m. M.

Find the times, at London, Dublin, Aberdeen, Quebec, New York, and Paris, of the rising, etc., of all the planets on the 25th December 1862, and also of the star Algenib, in Pegasus.

PROB. V.—*To find on what day of the year any star passes the meridian of a given place, at a given hour.*

RULE.—Bring the given star to the brass meridian, and set the hour circle to the given time; turn the globe till the index points to 12 noon,—and the day of the month on the horizon, which answers to the sign and degree of the ecliptic cut by the brass meridian, is the day required.

Ex.—On what days does Aldebaran come to the meridian at 9h. A., and at 3h. M. at Edinburgh? *Ans.*—Jan. 9th, and October 16th.

On what days do Procyon, in Canis Major; Sirius; Canopus, in Argo Navis; Antares; and Spica, in Virgo, come to the meridian, when it is 8 and 10 o'clock A., and 2 and 4 o'clock M. at London?

PROB. VI.—*Given the place, day of the month, and hour, to find the altitude and azimuth of the sun or a star.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic to the brass meridian, set the hour circle to 12, and fix the quadrant of altitude in the zenith; move the globe till the index points to the given hour, and place the graduated edge of the quadrant over the star or the sun's place,—the degrees on the quadrant over the star will be the altitude, and the distance of the edge of the quadrant from the north or south points on the horizon will be the azimuth.

* In moving the globe round, it will be observed that some stars never set and others never rise at the place for which the globe is rectified; these are called *circumpolar stars*.

Ex.—What are the altitude and azimuth of the sun, and of Altair, at Edinburgh, on the 25th December 1859 at 11 o'clock M.? *Ans.*—Sun's altitude, $9^{\circ} 15'$; azimuth, 14° from S. towards E. Star's altitude, $34^{\circ} 15'$; azimuth, 45° from S. towards E.

Find the altitude and azimuth of Mirach, in Bootes; Menkar, in Cetus; Fomalhaut; Alkes, in Crater; Capella, in Auriga; and Regulus, in Leo, at Gibraltar, Madrid, and St Petersburg, on the 21st of March, at 3 and 5 o'clock M., and at 8 and 11 o'clock A.

PROB. VII.—*Given the latitude of the place, the day of the month, and the altitude of a star, to find the hour.*

RULE.—Rectify the globe for the latitude of the place; bring the sun's place in the ecliptic to the brass meridian, set the hour circle to 12, and screw the quadrant of altitude in the zenith; move the globe both eastward and westward till the star comes under the given altitude on the quadrant,—and the index will show the time required.

Ex.—On Nov. 25 the altitude of Aldebaran was at Edinburgh 36° ; what was the hour? *Ans.*—9h. 5m. A., or 3h. 25m. M.

What was the time at Edinburgh, on the 25th March, when the altitude of Arietes was 30° and 10° ; of Ras Alhagus, in Serpentarius, was 45° and 30° ; and of Mirach, was 20° , 40° , and 60° ?

What was the time at the Cape of Good Hope, on the 31st August and 10th September, when the altitude of Canopus was 70° and 50° ; of Antares, 35° and 55° ; and of Sirius, 25° and 45° ?

PROB. VIII.—*Given the year and day, to find the place of a planet.*

RULE.—Bring the sun's place in the ecliptic to the brass meridian, set the hour circle to 12, and turn the globe till the index points to the hour at which the planet passes the meridian;*—then under the degree of the planet's declination on the brass meridian is its place on the given day.

Ex.—What was the place of Mercury and Venus on the 25th December 1859, the former having passed the meridian at 1h. 22m. A., and the latter at 10h. 53m. M.? *Ans.* Mercury was in 21° of Capricorn, declination $23^{\circ} 23'$ S.; Venus was in 18° of Sagittarius, declination $22^{\circ} 26'$ S.

Find the places of the Moon, Jupiter, and Saturn, on the 10th January, 21st March, and 15th July 1863.

Find the place of each of the planets on the first day of each month in 1866.

* The time of passing the meridian and the declination will be found in the Nautical Almanac, or in Oliver and Boyd's New Edinburgh Almanac.

A TABLE

SHOWING, IN GEOGRAPHICAL MILES AND DECIMALS, THE
 A DEGREE OF LONGITUDE, AT EACH DEGREE OF LATIT
 THE EQUATOR TO THE NORTH AND SOUTH POLES, T
 BEING SUPPOSED A SPHERM.

| Degrees of Latitude. | Miles. | Degrees of Latitude. | Miles. | Degrees of Latitude. |
|----------------------|--------|----------------------|--------|----------------------|
| 1 | 59.9 | 31 | 51.43 | 61 |
| 2 | 59.96 | 32 | 50.88 | 62 |
| 3 | 59.92 | 33 | 50.32 | 63 |
| 4 | 59.85 | 34 | 49.74 | 64 |
| 5 | 59.77 | 35 | 49.15 | 65 |
| 6 | 59.67 | 36 | 48.54 | 66 |
| 7 | 59.55 | 37 | 47.92 | 67 |
| 8 | 59.42 | 38 | 47.28 | 68 |
| 9 | 59.26 | 39 | 46.63 | 69 |
| 10 | 59.09 | 40 | 45.96 | 70 |
| 11 | 58.90 | 41 | 45.28 | 71 |
| 12 | 58.69 | 42 | 44.59 | 72 |
| 13 | 58.46 | 43 | 43.88 | 73 |
| 14 | 58.22 | 44 | 43.16 | 74 |
| 15 | 57.96 | 45 | 42.43 | 75 |
| 16 | 57.67 | 46 | 41.68 | 76 |
| 17 | 57.38 | 47 | 40.92 | 77 |
| 18 | 57.06 | 48 | 40.15 | 78 |
| 19 | 56.73 | 49 | 39.36 | 79 |
| 20 | 56.38 | 50 | 38.57 | 80 |
| 21 | 56.01 | 51 | 37.76 | 81 |
| 22 | 55.63 | 52 | 36.94 | 82 |
| 23 | 55.23 | 53 | 36.11 | 83 |
| 24 | 54.81 | 54 | 35.27 | 84 |
| 25 | 54.38 | 55 | 34.41 | 85 |
| 26 | 53.93 | 56 | 33.55 | 86 |
| 27 | 53.46 | 57 | 32.68 | 87 |
| 28 | 52.98 | 58 | 31.80 | 88 |
| 29 | 52.48 | 59 | 30.90 | 89 |
| 30 | 51.96 | 60 | 30.00 | 90 |

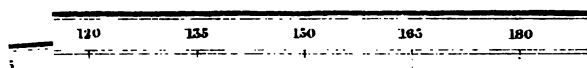
1

2

3

4

5



South Limit of the confined H₂

10^3

PHYSICAL GEOGRAPHY.

PHYSICAL GEOGRAPHY, in the most extended sense, comprehends an account of the figure and motions of the earth; of the composition of its external crust, so far as that has been investigated; of its mountain-chains, tablelands, plains, valleys, rivers, lakes; of its animal and vegetable productions; of the ocean, with its various phases; and of the surrounding atmosphere.

Several of these subjects have been treated in the preceding parts of this work; the others will now be briefly considered.

DIVISION OF THE GLOBE INTO LAND AND WATER.

The surface of the globe measures 197,000,000 square miles; and it has been estimated that the ocean covers nearly $\frac{3}{4}$ ths of the whole. The solid land of the globe therefore is 51,800,000 square miles, and the ocean 145,200,000 square miles.

The northern hemisphere contains 38,200,000 square miles of land, and 60,400,000 square miles of water; the southern hemisphere contains 13,600,000 square miles of land, and 88,400,000 square miles of water. It thus appears that the land in the northern hemisphere is nearly thrice as large as the land in the southern hemisphere; and this fact accounts for the difference of temperature between places situated at equal distances north and south of the equator.

If we conceive the earth to be divided into eastern and western hemispheres by the meridian circle 20° west longitude, there will be in the eastern hemisphere 37,000,000 square miles of land, and in the western 14,500,000 square miles; in other words the land in the western hemisphere is less than $\frac{1}{2}$ ths of the land in the eastern hemisphere.*

The solid land of the globe has been divided by geographers into Islands and Continents;† the smaller portions being termed Islands, and the larger Continents.

* It has been remarked, that Great Britain is situated nearly in the centre of the land of the globe; so that, other things being favourable, we should expect to find her, in regard to trade and commerce, the entrepôt of all nations.

† The usual definition of a continent is incorrect, and should be abandoned. In examining an artificial terrestrial globe, or a map of the world, we find that all the dry land is completely surrounded by the ocean.

The largest portion of continuous land is called the **GREAT EASTERN CONTINENT**. The portion next in size is called the **CONTINENT OF AMERICA**, the **WESTERN CONTINENT**, or the **NEW WORLD**, in consequence of its comparatively recent discovery.

The Great Eastern Continent is divided into three portions—viz. Europe, Asia, and Africa; and the Western into two—viz. North America and South America. The line of greatest length in the Old Continent, from south-west to north-east, is nearly parallel to the equator; in the New it is nearly at right angles to the equator.

That all the dry land of the globe was at one time at the bottom of the sea, is proved from observations made by geologists in every country. The continents and islands must, therefore, have been upheaved by some tremendous power in the interior of the earth itself—probably the same force which at the present time is the cause of earthquakes and volcanoes. The dry land is supposed to have been raised not all at once, but by many successive efforts of the upheaving power; and it is manifest either that the great mountain-chains must have been thrown up before or after the land was raised to its general level, or that the upheaving power must have acted with greater energy in their locality.

The projecting figure of all the southern terminations of land, and their continuation under the sea by banks and islands, are remarkable features. Under nearly the same meridians as the southern promontories, the northern coasts reach the highest north latitude. This will appear on comparing Cape Horn with Boothia Felix and Parry's Isles; the peninsula of Malacca with Cape Severo; and the Cape of Good Hope and the Agulhas Bank, with the North Cape and the Island of Spitzbergen. A similar configuration of the land is repeated on a smaller scale in various other places: thus, in Europe, the Scandinavian, the Spanish, the Italian, and the Grecian peninsulas; in Asia, Arabia, Hindostan, Cochin China, Corea, and Kamtschatka; in North America, Florida, Nova Scotia, Greenland, and California—all terminate in southern promontories. The chief exceptions to this conformation are Jutland in Denmark, and Yucatan in America. These peculiar aspects, with others which might be noticed, have probably been caused by the currents in the great Pacific and Arctic Oceans abrading or washing away the softer portions of the land, leaving only the harder and more rocky **eminences**.

EXERCISES.

What does Physical Geography comprehend in its most extended sense? How many square miles does the surface of the globe measure? How many of these are land? How many ocean? How many square miles does the land of the northern hemisphere measure? and how many the water? State the number of square miles of land and of water in the southern hemisphere. How much greater is the land in the northern than in the southern hemisphere? For what does this fact account?

How has the land of the globe been divided by geographers? What are the smaller portions termed? and what the larger? What is the largest portion of continuous land called? and what the next in size? Name the portions into which the great eastern and western continents are divided. What has been proved, from observations made by geologists, respecting the dry land of the globe? What is stated respecting the continents and islands? What is supposed respecting the raising of the dry land? What are the remarkable features of all the southern terminations of land? How does it appear that nearly under the same meridians as the southern, the northern coasts reach the highest north latitude? In what other places is a similar configuration of the land repeated on a smaller scale? Mention the only exceptions to this conformation. By what may these aspects of land have been caused?

COMPOSITION OF THE CRUST OF THE EARTH.

More than sixty substances, including the metals, have hitherto resisted the analysis of the chemist, and are, therefore, considered simple elementary substances. Of these simple substances only sixteen enter, in any large quantity, into the composition of mineral bodies,—namely, *oxygen, hydrogen, nitrogen or azote, carbon, sulphur, sodium, potassium, aluminum, magnesium, chlorine, fluorine, silicium, calcium, phosphorus, manganese, and iron*. To enumerate the various compounds formed from mixtures of these ingredients, would far exceed the limits of this work,—suffice it to say, that water is a compound of hydrogen and oxygen; atmospheric air, of oxygen and nitrogen, with a small but essential portion of carbonic acid. Carbon is the combustible substance in wood, coal, and turf. The diamond is pure carbon. Oxygen forms nearly one-half of carbonate of lime, the basis of limestone, one of the most extensive and useful formations on the globe; it enters in large quantities into all vegetable and animal substances, and at least one-half of the earth's crust is composed of it. Iron occurs in various forms, and in small quantities enters into the composition of many minerals as a colouring matter.

The chief mineral substances of which either stratified or unstratified rocks are composed, are *quartz*, *felspar*, *mica*, *augite*, *hornblend*, *oxide of iron*, *carbonate of lime*, *sulphate of lime*, *carbonate of magnesia*, and *sulphuret of iron*. Other minerals occasionally occur in rocks, and give to them their peculiar character,—such as tourmaline in some kinds of granite, flints in chalk and other calcareous formations, and garnets in some volcanic rocks.

Rocks, according to Humboldt, may be divided into four classes,—"1st, *Eruptive rocks*, or those thrown out from the interior of the earth in a liquefied or softened and more or less tenacious state (volcanic and plutonic rocks); 2d, *Sedimentary rocks*, or those deposited from fluids, in which the particles had been either dissolved or suspended, but from which they had been precipitated and deposited upon the surface of the earth; 3d, *Metamorphic rocks*, or such as have been altered in their intimate structure and stratification, either through the contact or vicinity of a plutonic or volcanic ejected rock, or—and this is more commonly the case—by the penetration of the vaporiform sublimed matters which accompany the escape of certain molten ejected masses; 4th, *Conglomerates*—coarse or fine grained sandstones and breccias,—rocks made up of mechanically divided masses of the three former species."

The latest eruptive rocks—basalt, greenstones, porphyries, etc.—are supposed to exist in a liquefied state underneath the granite, and to have been thrown up to the surface of the earth by volcanic action, in the same manner as active volcanoes continue to throw them up at the present day. In many places there are to be seen evidences of these rocks having pierced through the granite and superincumbent sedimentary beds, injecting themselves between the various strata and overlapping the whole.

Granite and syenite, which form the peaks of many of the loftiest mountains of the world, as well as many low and level plains, are supposed to have been in general the oldest igneous rocks, and to have been ejected not on the surface but in the deeper parts of the earth, and under an immense pressure.

All these rocks are crystalline in their structure, and have no trace of stratification, neither do they contain the remains of any vegetable or animal substance. They are massive and homogeneous in their character, and similar to volcanic rocks of the present day; so that no doubt can be entertained of their igneous origin.

The fossiliferous strata or formations, as now recognised by the most eminent geologists, are exhibited in a descending series in the following table:—

| | | |
|----------------------|---|---------------------------------|
| IV. <i>Recent</i> | { | Alluvium. |
| | { | Diluvium or Drift. |
| III. <i>Tertiary</i> | { | Upper { Pliocene. |
| | | { Miocene. |
| | { | Lower Eocene. |
| | { | Cretaceous { Chalk. |
| | | { Greensand. |
| | | { Wealden. |
| II. <i>Secondary</i> | { | Oolite { Oolite. |
| | | { Lias. |
| | | { Bunter. |
| | { | Trias { Muschelkalk. |
| | | { Keuper. |
| | { | Permian { Magnesian limestone. |
| | | { New red sandstone. |
| I. <i>Palæozoic</i> | { | Carboniferous { Coal formation. |
| | | { Mountain limestone. |
| | { | Devonian or Old red sandstone. |
| | { | Silurian { Upper. |
| | | { Lower. |

The sedimentary or stratified rocks have evidently been deposited from a fluid (sea or fresh water), in which their particles were either mechanically suspended or chemically dissolved; they repose upon the unstratified rocks, and are divided into the *primary*, the *palæozoic*, the *secondary*, and the *tertiary* formations. The primary formations are called metamorphic rocks, in consequence of their being altered in character by coming in contact with the plutonic masses. The lower series of the primary rocks, *gneiss* and *mica schist*, consist of the same minerals as granite, but the ingredients are differently arranged. In granite the felspar, quartz, and mica are mixed together in an irregular granular manner; but in gneiss and mica slate they form distinct layers. This laminar appearance, combined with the stratification of the mass, is a proof that aqueous agencies have determined their aggregation. In these two rocks, and also in the clay-slate and in primary limestone, no fossils are found; but in the palæozoic and all the subsequent formations there are fossil remains of plants and animals whose types are no longer to be found on the globe, showing that there have been many exertions of creative power in operation since the

foundations of the world were laid. It is a fact no less curious than instructive, that the traces of animal existence, during the period of the deposition of the earlier strata, are all of the lower classes, and that in the more recent strata remains of animals of the higher classes, fishes, reptiles, birds, and mammals, first make their appearance. No remains of man have yet been discovered except in beds like those now forming; and even species of animals at present existing on the globe are only found in the newer tertiary deposits.

EXERCISES.

How many substances have hitherto resisted the analysis of the chemist? and what are they, therefore, considered? How many of these enter into the composition of mineral bodies? Name them. Of what is water a compound? atmospheric air? In what is carbon the combustible substance? What does oxygen form? and into what does it enter in large quantities? Name the chief mineral substances of which rocks are composed. Into how many classes may rocks be divided? What are eruptive rocks? what sedimentary? what metamorphic? what conglomerate? What are the latest eruptive rocks? and how are they supposed to have been thrown up to the surface of the earth? What are seen in many places respecting these rocks?

What do granite and syenite form? How are they supposed to have been ejected? What are all these rocks in their structure? and of what have they no trace? To what are they similar? and of what can no doubt be entertained? Upon what do the sedimentary rocks repose? and how are they divided? Why are the primary formations called metamorphic rocks? Of what do the lower series of the primary rocks, gneiss and mica schist, consist? In what does granite differ from gneiss and mica schist? In what formations are no fossils found? Where are fossils found? What is stated as a curious and instructive fact?

HILLS AND MOUNTAINS.

Elevations of land not exceeding 2000 or 3000 feet are generally called *hills*, and when several of these are connected by less elevated portions of land, they are termed a *chain* of hills. Higher elevations are usually called *mountains*; several of these running in the same direction are termed a *chain* or *range*; and several chains or ranges when connected together are called a *system*.

The external form of hills and mountains depends chiefly on their geological character; thus, hills or mountains principally composed of the softer rocks, have generally a rounded contour, while those composed of the harder and more durable slates shoot up into sharp pyramidal peaks.

The appearances presented by the tops of mountains are called *needles, peaks, teeth, horns, domes*; the upper parts of such mountains as have been produced by volcanic eruptions are called *cones*; these rise in the form of a sugar-loaf, and are in general perfectly regular in their slopes; at the top there is sometimes a hollow in the form of an inverted cone, called the *crater*. It has been observed that chains of mountains are often much more steep on one side than on the other. The Pyrenees descend on the French or north side far less rapidly than on the Spanish or south side; the Alps are steeper on the Italian or south side than on the north; the great chain of the Scandinavian mountains rises much more abruptly on the west and north than on the east and south. The Himmaleh chain slopes gradually towards the plains of Hindostan, but is rugged and steep on the northern or Tibetan side; while the Andes rise abruptly from the sea on the western side, and slope gently towards the eastern plains. The same may be seen in small isolated hills, such as the Calton Hill, Salisbury Crag, and Arthur Seat, at Edinburgh, which rise abruptly from the west, and descend gradually towards the east. This phenomenon has been called by geologists *Crag and Tail*.

Mountain-Chains.—In examining the map of any country in which mountain-chains prevail, it will be seen that these chains almost invariably run in the direction of its greatest length.

In the continent of America, whose greatest length, contrary to that of the Old World, is from north to south, we find an immense and almost unbroken chain of mountains, only second in elevation to the highest on the earth, extending nearly 9000 miles from the Arctic Ocean, in latitude 70° north, through California, Mexico, Central America, Colombia, Peru, Chili, Patagonia, and, though broken by the Straits of Magellan, terminating in the island of Terra del Fuego. In the United States are parallel chains stretching in the same direction. In South America we may trace several chains running north and south, enclosing, for hundreds of miles, the beds of the many rivers which unite to form the mighty floods of the Amazon and Paraguay.

The mountains of Europe may at first sight appear of small importance; but if we connect the Pyrenees, the Alps, the Carpathian, the Balkan, the Asiatic ranges of Taurus and Anti-Taurus, the chain of Caucasus, the Elburz, the Hindoo Coosh, the Belour Tagh, the Kwan-Lun, the Altaian, and the Stanovoi mountains, we have a chain, in the longitudinal direc-

tion of the old continent, extending at least 12,000 miles. Connected as this chain is with the mighty Himmaleh, Yunlung, and the Peling mountains in China, the mountains of Cochin China, the Solyman and Gilgee ranges to the west of the Indus, the Ural Mountains, and the Appenines, it forms a mountain-system undoubtedly the greatest and most magnificent on the earth.

The Eastern and Western Gauts in Hindostan would seem to terminate towards the south in Adam's Peak, in the island of Ceylon. In the Scandinavian peninsula a great mountain-range extends from N. to S. through all its length, and, though apparently unconnected with any other system, may be allied to the Ural chain, a spur of which sets westward towards the White Sea. In the northern division of Africa are the Atlas Mountains, extending W.S.W. to E.N.E. from Cape Geer, on the Atlantic, to Capes Blanco and Bon, on the Mediterranean, and to the Gulf of Gabes. Various spurs set off from the principal chain, one of which terminates in the Hill of Apes, opposite Gibraltar. Some have supposed that the Atlas Mountains are connected with the Alps by means of Mount Etna and the Appenines, and with the mountains of Spain by the Straits of Gibraltar. The Nile flows between two parallel ridges of hills from the elevated plateau of Abyssinia; and from this plateau rise many mountain-peaks of vast elevation. A great mountain-chain is supposed to stretch across the African continent, from west to east, in the neighbourhood and in the line of the equator. There are extensive ranges in the vicinity of Cape Town.

If we examine a map of Great Britain, we shall find many chains of hills extending from one side of the island to the other, not, however, in the line of its greatest length, but from N.E. to S.W. Thus the Cheviots extend in this direction between England and Scotland. From St Abb's Head, on the north-east coast, a chain, under the different names of the Lammermoor Hills, the Moorfoot Hills, the Lowther Hills, etc., runs across to the Irish Sea; while, farther north, the great chain of the Grampians stretches from near Stonehaven across to the Atlantic Ocean.

EXERCISES.

What are hills? and what is a chain of hills? What are higher elevations usually called? What is termed a chain? a system? On what does the external form of hills and mountains chiefly depend? What is observed of mountains principally composed of *soft rocks*, and of those composed of harder slates? What are the *appearances* presented by the tops of mountains called? What has

been observed of every chain of mountains? Give instances. Give instances of this in small hills. What has this phenomenon been called?

In what directions do mountain-chains almost invariably run? In the continent of America, what do we find? What is its length? and through what countries does it extend? What are in the United States? In South America, what may be traced? Name the mountains which, when connected, form a chain in the longitudinal direction of the old continent. What is the extent of this chain? With what other mountains is this chain connected? What does it form? Where do the Eastern and Western Gauts seem to terminate? Describe the range in the Scandinavian peninsula. Name the mountains in the north of Africa, and the direction in which they extend. What have some supposed respecting these mountains? Where is a great mountain-range supposed to stretch across the African continent? Upon examining a map of Great Britain, what do we find? In what direction do they run? Where do the Cheviots extend? Under what names is the chain which stretches from St Abb's Head to Loch Ryan known? Where does the chain of the Grampians run?

Insulated Mountains.—In many parts of the world, especially in islands, conical mountains, apparently not connected with any chain or system, shoot up to immense heights,—such as Mount Etna, in Sicily; the Peak of Teneriffe; Mowna Loa, in the Sandwich Islands; Mount Egmont, in New Zealand; and many others. These are called insulated mountains; but if greater facilities were afforded to geological investigation, there can be little doubt some of them might be referred to one system or another.

Age of Mountains.—This subject is yet in its infancy, and the speculations upon it are liable to great uncertainty, but by an accurate analysis of the various parts which compose the different systems, a tolerably correct estimate may be made, and we may be enabled to say that one system or chain was in existence before another. For example, it is considered safe to assert that the Pentland Hills, near Edinburgh, are of more recent formation than the Lammermoors or the Grampian Hills, for while, in the rocks composing the Pentlands, are frequently found embedded portions of the rocks composing the other two ranges, there has in no instance been found any portion of the rocks composing the Pentlands in the Lammermoors or Grampians. The upheaval of the Pentland Hills must have been subsequent to the formation of the carboniferous system, as is evident from its causing the rise of the Mid-Lothian coalbeds, ironstone, and limestone. In the same way, it is inferred that the Alps are more modern than the Pyrenees; being com-

posed of more recent rocks; while both the Pyrenees and the Alps are much younger than the mountains in our own country composed of granite, gneiss, mica slate, or quartz rocks.

Volcanoes.—Mountains from which issue smoke, ashes, lava, water, and fetid mud, are called volcanoes; and the phenomena which they exhibit are often grand and terrible. In all parts of the earth there are traces of extinct volcanoes, and in many places they are still found in activity; in short, the whole earth may be considered as an immense volcano in constant activity, with numerous outlets. From the ratio of the increase of heat, as we proceed downwards, it has been inferred, that at the depth of from 80 to 160 miles, there is a temperature of 12,000° of Fahrenheit, at which temperature all the known rocks would be in a state of fusion; the solid crust of the globe, therefore, cannot anywhere exceed 160 miles in thickness, and in many places it may be much less. It is obvious that as the temperature of the earth's crust diminishes in a greater ratio than the central mass, it will contract and press upon the fluid matter of the central mass, and produce volcanic eruptions, which, by the laws of mechanics, will burst out where the crust is thinnest, and opposes the smallest resistance. It has been calculated by M. Cordier that a diminution of $\frac{1}{153,125}$ of an inch in the mean radius of the earth would occasion a volcanic eruption. Some have supposed that electrical forces aid greatly in these eruptions, but there are, as yet, no sufficient data to guide us in such speculations.

In Asia and America a band of active volcanoes may be traced, beginning at Barren Island in the Bay of Bengal, through Sumatra, Java, the Moluccas, and Sunda Islands, the Philippines, the Japan and Kurile Islands, the peninsula of Kamtschatka, the Aleutian Islands, the Rocky Mountains in North America, the mountains of Mexico, Central America, the Andes of South America, the Island of Terra del Fuego, and in Victoria Land.

In Europe the famous Mount Hecla and several others in Iceland, Vesuvius in Italy, and Stromboli, one of the Lipari Isles, are "familiar as household words." In Africa are found many traces of volcanic action in the Atlas Mountains, and the Peak of Teneriffe has, within a recent date, shown tokens that its fire, though slumbering, is not yet quenched. It was at one time supposed that water was a principal ingredient in the production of volcanic action, and that volcanoes were only to be found in islands, or upon the seacoast. The latter opinion has

been long exploded by the discovery of active volcanoes in the centre of Asia, more than a thousand miles from the sea. It is, however, remarkable that most of the active volcanoes are at short distances from the sea; and it is no less remarkable, that amid the eternal snows of the arctic and antarctic oceans, the volcanic agencies develop themselves no less violently than in the temperate regions of the globe.

LIST of the Principal Mountains of the World, with their Height above the sea in English feet.

Those marked * are Volcanoes.

EUROPE.

| Mountain. | Chain. | Country. | Height in feet. |
|--------------------------------|--------------------|-------------------|-----------------|
| 1. Mount Blanc..... | Alps..... | France..... | 15,744 |
| 2. Mount Rosa..... | Alps..... | Switzerland..... | 15,208 |
| 3. Ortler Spitz..... | Alps..... | Tyrol..... | 12,833 |
| 4. Mulhacen..... | Sierra Nevada..... | Spain..... | 11,678 |
| 5. Maladetta..... | Pyrenees..... | Spain..... | 11,168 |
| 6. Mount Perdu..... | Pyrenees..... | France..... | 10,994 |
| 7. *Etna..... | ..... | Sicily..... | 10,874 |
| 8. Ruska-Poyana..... | Carpathians..... | Hungary..... | 9,912 |
| 9. Olympus..... | ..... | Turkey..... | 9,754 |
| 10. Mount Corno..... | Apennines..... | Italy..... | 9,521 |
| 11. Sneehatten..... | Dovrefield..... | Norway..... | 8,120 |
| 12. Parnassus..... | ..... | Greece..... | 8,068 |
| 13. Mount Mezin..... | Cevennes..... | France..... | 5,820 |
| 14. *Hecla..... | ..... | Iceland..... | 5,210 |
| 15. Ben Nevis..... | ..... | Scotland..... | 4,406 |
| 16. *Vesuvius..... | ..... | Naples..... | 3,932 |
| 17. Snowdon..... | ..... | Wales..... | 3,590 |
| 18. Macgillicuddy's Reeks..... | ..... | Ireland..... | 3,414 |
| 19. Ben Lomond..... | Grampians..... | Scotland..... | 3,192 |
| 20. *Stromboli..... | ..... | Lipari Isles..... | 3,020 |

ASIA.

| | | | |
|-------------------------|-------------------|-----------------------|--------|
| 1. Mount Everest..... | Himmaleh..... | N. of Hindostan..... | 29,002 |
| 2. Kunchin-jinga..... | Himmaleh..... | N. of Hindostan..... | 28,156 |
| 3. Dhawalagiri..... | Himmaleh..... | N. of Hindostan..... | 26,826 |
| 4. Highest Peak of..... | Hindoo Coosh..... | N. of Cabul..... | 20,000 |
| 5. Elburz..... | Caucasus..... | Circassia..... | 18,500 |
| 6. Ararat..... | ..... | Armenia..... | 17,112 |
| 7. Demavend..... | Elburz..... | Persia..... | 14,700 |
| 8. Ophir..... | ..... | Sumatra..... | 13,842 |
| 9. *Mowna Loa..... | ..... | Sandwich Islands..... | 13,764 |
| 10. Italitzkoi..... | Altai..... | Central Asia..... | 10,735 |
| 11. Djebel Makmel..... | Lebanon..... | Palestine..... | 10,000 |
| 12. *Awatsha..... | ..... | Kamtchatka..... | 9,600 |
| 13. Olympus..... | ..... | Turkey in Asia..... | 9,000 |
| 14. Sinai..... | ..... | Arabia..... | 8,592 |

3,000,000 square miles. The northern and eastern portion of this immense plain is about 4000 feet above the level of the sea, but the southern and south-western portion, where it approaches the Himmaleh Mountains, reaches an elevation of at least 12,000 feet. The great desert of Gobi occupies the centre of this tableland. In Afghanistan and Persia there is a plateau of 850,000 square miles, the eastern portion of which is 7000 feet above the sea, but it gradually slopes towards Persia to 3000 or 4000 feet. The tableland of Armenia is 7000 feet in elevation; and further west is the plain of Anatolia, which is at least 2000 feet in height. The tableland of the Deccan, in Hindostan, is from 2000 to 3000 feet above the sea. The western part of Arabia is a vast plain from 3000 to 4000 feet high, gradually sloping to a much less elevation on the shores of the Persian Gulf.

In Africa.—That portion of Africa which is situated to the north of the sixteenth parallel of north latitude, and comprehends the Sahara, is an immense tableland of small elevation; and the general belief is that the central land of Africa is an enormous plateau rising in many places to great elevations above the sea, but whose general height does not exceed 7000 or 8000 feet. Abyssinia is a tableland of much the same elevation.

In America.—In North America the country which stretches along the eastern base of the Rocky Mountains, and for about 400 miles eastward, is a series of tablelands of from 2000 to 3000 feet in height. The immense plateau of Mexico, extending from the north of California to the Isthmus of Tehuantepec, is from 6000 to 9000 feet in elevation. To the south of the Mexican plateau are the tablelands of Central America, about 6000 feet in height. In South America are the highest tablelands on the globe: that of Potosi or Titicaca, between the fourteenth and twenty-first parallels of south latitude, is from 12,000 to 13,000 feet in elevation; that of Pasco, which extends from the tenth to the twelfth parallel of south latitude, is upwards of 11,000 feet high; and that of Quito, stretching on both sides of the equator, is 9000 feet above the level of the sea.

EXERCISES.

Where are conical mountains, unconnected with any chain, found?

What is said respecting the age of mountains? What is it considered safe to assert concerning the age of the Pentland Hills? How is this proved? What is inferred of the Pyrenees and Alps?

What mountains are called volcanoes? What are found in all parts of the earth? As what may the whole earth be considered? From the ratio of increase of heat, as we proceed downwards, what has been inferred? What thickness can the solid crust of the globe not exceed? In Asia and America, where may a band of active volcanoes be traced? Name the volcanoes in Europe. In Africa what are found? What is a remarkable fact respecting the active volcanoes?

What is the height of Mount Blanc? Mulhacen? Maladetta? Ruska-Poyana? Mount Corno? Sneehatten? Ben Nevis and Ben Lomond? Where, and in what countries, are they situated? What is the height of Mount Everest? Dhawalagiri? Elburz? Demavend? Djebel Makmel and Italitzkoi? Where are they situated? and in what countries?

Name the tablelands in Europe, and their elevations. Of what does Central Asia consist? What are its elevations? What occupies its centre? What is the extent of the plateau in Afghanistan and Persia? What are its elevations? Where are the other tablelands of Asia? and what are their heights? Where are the tablelands of Africa situated? Mention the tablelands of North America. What are the extent and elevation of the plateau of Mexico? What is the height of the tablelands of Central America? Name the tablelands of South America, and tell where they are situated. What are their heights above the level of the sea?

PLAINS.

European Plains.—The great European plain extends from the German Ocean to the Ural Mountains. It includes Holland, Belgium, the Northern part of France, Prussia, Northern Germany, the whole of Russian Poland, and Russia Proper. With the exception of the Valdai Hills, which are only a few hundred feet high, the whole is one monotonous plain. In the north-west of Germany there are extensive *Heaths* and *Landes*, which extend from Lower Silesia through Hanover to Jutland. Between the Gironde and the Pyrenees, in France, there are extensive plains of heath and marshes; while the department of Landes consists almost entirely of marshes and heaths, and an extensive plain of sand and gravel is found at the mouth of the Rhone. In Lombardy and Naples are the most fertile plains of the world; but there are nowhere better cultivated plains than in the south and centre of England.

Asiatic Plains.—The whole of Siberia, from the foot of the Altai mountains, etc., to the Arctic Ocean, is an immense plain which gradually sinks into marshes and sloughs, called *Tundra*, as it approaches the ocean. There are immense plains in the north-west of China; in the north of Hindostan; in the

vicinity of the Sea of Aral; in Mongolia; in Persia; and in the south-east of Turkey. In the south-east of Russia, and in Western Turkestan, there are vast marshes and plains called *Steppes*.

African Plains.—Lower Egypt and Central Africa form an immense fertile plain. Rich plains also stretch from the foot of the Atlas Mountains to the Mediterranean Sea. Upper and Lower Guinea constitute an extensive plain of great fertility.

American Plains.—Between the Rocky and Alleghany Mountains there are extensive plains, stretching from the Canadian lakes to the Gulf of Mexico, and from the north of the Canadian lakes to the Arctic Ocean. The surface of these lowlands has been estimated at 2,430,000 square miles. They are termed *Prairies* or *Savannahs*, and are distinguished into three kinds. The bushy or heathy prairies, covered with vines, shrubs, and flowers, form the greater part of Illinois, Indiana, and Missouri. Dry rolling prairies are so called from their wavy surface, and utter want of stagnant pools and swamps; their vegetation consists only of grass, flowers, and weeds, on which browse vast herds of bison, many of them numbering from 50,000 to 100,000 head. The wet or marsh prairies, which are found near the embouchures of the great rivers, abound in stagnant pools of water, covered with tall rank grass, and sheltering enormous alligators.

In South America the plains are called *Llanos*, *Selvas*, and *Pampas*. Between the Andes and the Orinoco is a vast plain, measuring at least 250,000 square miles, and with a mean height estimated at 200 feet. So nearly level is this plain, that in the rainy season the river Rio Negro pours its waters into the Orinoco and the Amazon at the same time, by the river Casiquiare. The great plain through which the Amazon flows, stretching from the Andes to the Atlantic Ocean, is one of the most extensive in the world. The *Pampas* or *Flats* extend in length from about 15° south latitude to the southern termination of the continent,—a distance of nearly 2000 miles; their breadth, from the Atlantic to the foot of the Andes, varies from 900 to 240 miles. The area of this immense plain has been estimated at 840,000 square miles. The northern portion is fertile, and covered with fine grass, on which graze myriads of wild-horses and bullocks. The southern part is marshy, and much less productive than the northern.

DESERTS.

Deserts are barren wastes, consisting chiefly of sand and shingle, nearly destitute of water, and with little or no vegetation beyond a few shrubby plants. When a spring of fresh water is found, it forms a green spot termed an *Oasis*. In Asia the principal deserts are the "Great Desert of Gobi," extending from north to south between the Kwan-Lun Mountains and the Altaian range, and from east to west from the borders of Western Turkestan to the Inchan or Kingan Mountains. The great Salt Desert of Persia occupies nearly the whole of Khorasan and Kerman. The great Syrian Desert, to the east of Palestine, commences near the Euphrates, and is continued through the whole of Arabia to the Arabian Sea.

In Africa is the well-known Sahara or Great Desert. Its length from the Atlantic, about 18° west longitude, to the Nile, in nearly 30° east longitude, is at least 2700 miles, whilst its breadth extends from nearly 17° to 30° north latitude, giving for its surface 2,059,200 geographical square miles. The Libyan Desert, west of the Upper Nile, and the Nubian Desert, between the Upper Nile and the Red Sea, may be regarded as merely portions of the Sahara.

In North America, east of the Rocky Mountains, is a great desert, with occasional salt-springs and beds of rock-salt, with little or no herbage, and entirely destitute of trees; its average breadth is about 400 miles. South from the Columbia River, and between the Rocky Mountains and those of California, lies an immense desert, consisting of sand and shingle, bare of vegetation, and with not a tree to be seen.

In South America are the sandy deserts of Campos Parexis at the sources of the Paraguay, the El Gran Chaco on the west of this river, and still farther west, the Las Salinas, or Salt Desert. The desert of Patagonia, consisting chiefly of shingle and marshes, commences near the Rio Negro, and extends southwards about 800 or 900 miles; its breadth stretches from the Andes to the Atlantic. The desert of Atacáma is composed of brown and black sand, and extends from Potosi to Chili, and from the Andes to the Pacific Ocean.

EXERCISES.

What is the extent of the great European plain? and what countries does it include? What is its only diversity of surface? What are in the north-west of Germany, etc.? between the Gironde

and the Pyrenees? and in the department of Landes, in France? Where are the principal plains of Asia situated? What are the marshes and plains in the south-east of Russia and in Western Turkestan called? Name the African plains. What is the situation of the extensive plains in North America? and at what has their surface been estimated? What are they termed? and how are they distinguished? What animal browses in herds over the dry rolling prairies? and of what numbers do these herds often consist? Where are the wet or marsh prairies found? and in what do they abound? What animals fill these pools? In South America what are the plains called? Of what extent is the plain between the Andes and the Orinoco? What proof is given of its being nearly level? Of what extent is the plain through which the Amazon flows? Name the extent of the plain south of this. What is its estimated surface? What animals feed in vast numbers on its northern portion?

What are deserts? Name the principal deserts in Asia, and tell their situations. Name the deserts in Africa. What are the length and area of the Sahara? Describe the deserts in North America. What are the deserts in South America? What is the extent of the great shingle desert of Patagonia? of Atacama?

EARTHQUAKES.

Earthquakes are phenomena closely allied to volcanoes. They are evidently the result of the same physical forces which produce volcanoes; and it has been observed that, when volcanoes happen to be near the seat of a country disturbed by an earthquake, though inactive for various periods, they emit smoke, ashes, and frequently lava about the time of the disturbance. In all parts of the world earthquakes have been felt, and in no quarter more fearfully than in Europe. The great earthquake which engulfed Lisbon on the 1st of November 1755, was felt over the whole of Europe, in Africa, in the West Indian Islands, and on the continent of America: in the north of Africa, a town about eight leagues from Morocco, with a population of from 8000 to 10,000 inhabitants, with their cattle, was swallowed up; in Great Britain and Ireland the agitation of the waters of lakes was perceived; Loch Lomond, in Scotland, without any apparent cause, rose against its banks to the height of two feet four inches, and then subsided below its usual level; at Kinsale, in Ireland, the sea rushed into the harbour, whirled round several vessels, and then poured into the marketplace; the lakes of Switzerland, and the sea off the Swedish and Norwegian coasts, were violently agitated; at Barbadoes and several of the Antilles Islands, the tide, which seldom exceeds 30 inches, suddenly

rose upwards of 20 feet; several vessels in the Atlantic Ocean felt the shock as if they had struck upon a rock; and it is said that a ship 40 leagues west from St Vincent experienced so violent a concussion, that the men were thrown a foot and a half perpendicularly up from the deck.* In later times, however, the West Indian Islands, America, and the Asiatic Isles, seem to be the regions underneath which the internal forces have been most powerfully exerted, and have produced the most fearful results. The great earthquake of Riobamba, in 1797, was felt over a district of 214,200 square miles; at a distance of 240 miles the volcano of Pasto, for three months previous to the earthquake, had continually emitted a lofty column of smoke, which suddenly ceased upon its occurrence; and at the same moment, at the foot of Tunguragua, the earth was rent open in several places, and threw up such a vast quantity of water and fetid mud, called Moya, that 85,000 Indians perished by the eruption. In valleys 1000 feet broad, the water and mud of these eruptions attained the height of 600 feet.

On the 30th of January 1811, in the Azores group of islands, there suddenly appeared an island, which was named Sabrina, and was the precursor of terrible earthquakes which, from May 1811 till June 1813, almost uninterruptedly shook and devastated, first, the Antilles; then the valleys of the Ohio and the Mississippi; and, lastly, the coast of Venezuela. Thirty days after the total destruction of the capital of the province, the long inactive volcano of St Vincent, one of the Antilles, burst

* On the 1st of November 1755, at about forty minutes past nine o'clock in the morning, a sound as of thunder was heard underground, and, immediately after, a violent shock threw down the greater part of Lisbon. In the course of about six minutes, 60,000 persons perished. The sea at first retired, and laid the bar dry; it then rolled in, rising fifty feet or more above its usual level. The mountains in the vicinity were impetuously shaken, and are reported to have opened at their summits, which were split and rent in a wonderful manner, huge masses of rock being thrown down into the subjacent valleys. Flames, supposed to have been electric, are said to have issued from these mountains: they are also said to have smoked; but vast clouds of dust, arising from the demolished city, seem to have given rise to this appearance.

The most extraordinary circumstance which occurred at Lisbon during the catastrophe was the subsidence of a new quay, built entirely of marble, at an immense expense. A great concourse of people had collected there for safety, as a spot where they might be beyond the reach of falling ruins; but suddenly the quay sank down with all the people on it, and not one of the bodies ever floated to the surface. A great many boats and small vessels anchored near it, full of people, were also swallowed up as in a whirlpool. No fragments of these wrecks ever rose again to the surface, and the water in the place where the quay had stood has been ascertained to be 100 fathoms deep.

forth with a frightful explosion. A remarkable phenomenon accompanied this eruption: at the moment of its occurrence an appalling subterraneous noise was heard in South America over a district of 35,000 square miles. The inhabitants agreed in comparing the sound to the noise of heavy artillery. The distance from the confluence of the Rio Negro with the Apure (the distance at which these sounds were heard) to the volcano, measured in a straight line, is no less than 628 miles. This noise was certainly not propagated through the atmosphere, but must have arisen from some deep-seated subterranean cause. Its intensity was, moreover, hardly greater on the shores of the Caribbean Sea, near the seat of the raging volcano, than in the interior of the country, in the basin of the Apure and the Orinoco.

On the 20th of February 1835, a terrible earthquake suddenly and completely demolished Concepcion and Talcahuano, besides seventy villages in Chili. Shortly after the shock, a great wave, with a smooth outline, was seen, at the distance of three or four miles, approaching the shore. At the head of the Bay of Concepcion it broke in a fearful line of white breakers, which rushed up to a height of twenty-three feet above the highest spring-tides. The force of this wave was so great that a cannon at the fort, four tons in weight, was carried by it fifteen feet inwards. A schooner was left in the midst of the ruins, 200 yards from the beach. The first wave was followed by two others; and, in one part of the bay, a ship having been pitched high and dry on the shore, was carried off by the retiring wave, — was again driven on shore, and again carried off.

In most earthquakes the motion of the ground is undulatory, or similar to a sea-wave. Sometimes, however, there is a vertical motion from below. The vertical motion was exceedingly violent in the earthquake of Riobamba in 1797, the bodies of many of the inhabitants of the unfortunate city being tossed across a river to the summit of a hill some hundred feet high. The phenomena attending earthquakes have been but partially observed, and very inadequately explained, and no wonder; for when a man feels the solid crust of the globe giving way beneath his feet, and sees around him the edifices reared by human skill and labour crumbling before his eyes, he cannot look upon the scene with that calm and philosophic spirit so necessary for discriminate and nice inquiry.

EXERCISES.

What are earthquakes? Where have they been felt? When did the great earthquake which engulfed Lisbon occur? Where was it felt? What calamity did it produce in the north of Africa? Mention some of its effects in Great Britain and Ireland. What took place in other parts of Europe? What occurred in the West Indies and in the Atlantic? In what regions have earthquakes, in later times, produced the most fearful results? When did the great earthquake of Riobamba happen? Over what extent was it felt? How many Indians perished by the water and mud eruptions at the foot of Tunguragua? What was the precursor of the great earthquakes which happened between 1811 and 1813? What places felt the effects of these earthquakes? What remarkable phenomenon accompanied the eruption of the volcano of St Vincent? To what did the inhabitants compare this noise? What demolition was caused in Chili by the earthquake in 1835? What occurred shortly after the shock? What proofs are given of the force of this wave? What is the motion of the ground in most earthquakes? What instance is given of the violence of the vertical motion in the earthquake of Riobamba in 1797?

SPRINGS.

Springs are formed from melted snow, dew, vapour, and rain, which, falling on high elevations of the land, are filtered through the fissures of the rocks, and, combining together, issue from the earth at a lower level, and, it may be, at the distance of several miles.

Springs which continue without any apparent increase or diminution of their waters, are called *perennial*; such as, at certain seasons of the year, cease to flow, are called *periodical*; such as alternately flow and stop, are called *intermitting*; and those whose waters ebb and flow at short and regular intervals, are called *reciprocating* springs.

In Greenland many of the springs and fountains rise and fall with the flow and ebb of the tide. In England and Wales, and in Spain, many springs have similar periodical returns. At Giggleswick, in the West Riding of Yorkshire, there is a well which ebbs and flows several times in an hour, and altogether ceases to flow when the weather is either very dry or very wet.

Common spring water is generally, to a certain extent, impregnated with mineral and earthy matters, particularly with gypsum, lime, and saline particles.

When the water of a spring contains a sensible portion of gaseous or mineral particles, it is called a *mineral* spring.

Mineral springs may be divided into four classes: 1st, Those containing salts of iron are called *martial* or *chalybeate* springs; 2d, Those which contain a considerable portion of one or more alkaline or earthy salts are called *saline* springs; 3d, Such as are combined with carbonic acid gas or fixed air are called *acidulous* springs; and, 4th, Such as are impregnated with sulphuretted hydrogen are called *sulphureous* or *hepatic* springs.

The temperature of springs is, in general, subject to the same causes which regulate the heat of the earth's surface; and unless they are of very small depth and extent, the temperature is generally a little higher than the mean annual temperature of the place where they are situated. From this mean temperature, however, many springs vary very widely, reaching nearly the temperature of the boiling point of water. The spring of Urijino, in Japan, is 212° Fahrenheit. The hot springs of La Trinchera, three leagues from Valencia, in South America, form a rivulet which, even in seasons of the greatest drought, is two feet deep and eighteen feet wide; their temperature is 195° Fahrenheit, and it is said that eggs can be boiled in them in four minutes. At the distance of forty feet there are other springs entirely cold. Both cold and hot springs contain, in solution, great quantities of calcareous matter, which, when deposited, forms rocks. The hot springs of San Philipppo, in Tuscany, have formed a considerable hill of calcareous *tuff* (*Travertin*), as hard and compact as limestone. It is curious to know that the ancient temples, the gorgeous palaces, the magnificent churches—in a word, all Rome itself—are built of the concretionary masses which have been deposited by springs.

RIVERS.

The water flowing from melted snow, and from springs, forms currents called *rills* or *rivulets*; several of these combined are called *streams*; and *streams* gradually descending from higher to lower levels generally unite in one large current or *river*, which conveys their collected waters to the ocean.

The high land which separates from each other the sources of rivers flowing in different directions, is called the *water-shed* of these rivers; the surface of a country which is *drained* by a river, is called the *basin* of that river.

The principal water-shed of Europe is the Alps, whence issue the chief rivers of the continent, viz.: the Danube, Aar, Inn,

Adige, Adda, Tessino, Rhone, and the Rhine, which all take their rise at no great distance from each other.

The Valdai Hills, the Carpathian Mountains, and the Pyrenees, form other water-sheds, from which the Western Dwina, Northern Dwina, Volga, Don, Dnieper, Vistula, Pruth, Theiss, Ebro, Gironde, etc., issue. The Scandinavian mountains form the water-shed of the Norwegian and Swedish rivers.

Rivers, when not obstructed, generally flow at right angles to the mountain-chains, from whose upper ridges they take their rise; but as they must always follow the descending levels, they often take a very irregular and circuitous course to the sea. In the course of ages, rivers cut channels for themselves through the hardest rock, and they are occasionally turned from their courses by natural or accidental obstructions. In tropical countries, where they frequently overflow their banks, they sometimes scoop out new channels; but, for the most part, they follow the hollow valleys previously formed for their reception.

It is remarkable that most of the great rivers flow from west to east, from north to south, or from south to north, and that very few flow from east to west.

The comparative velocity of the great rivers of the globe is not known with any degree of certainty; their volume of water and their degree of slope are the only data whence their velocity has hitherto been estimated. Where the fall of a river is sudden, and its velocity extremely quick, it forms what is called a *rapid*; and where it rushes over a perpendicular rock it makes what is called a *cataract* or *waterfall*. Where a rivulet or small stream dashes over a rock it makes what is called a *cascade*.

The Rhone, in part of its course, has a slope of one foot in 2620 feet, and it flows at the rate of 120 feet in a minute, or 1½ mile an hour.

Rivers, especially when flooded, carry down with them large quantities of solid matter held in suspension; and as their velocity decreases when they approach the sea, this suspended matter is deposited, and forms triangular banks called *Deltas*. These deltas gradually increase in size until they rise above the ordinary level of the river; and, in many places, they form large tracts of rich and fertile land. From this cause most large rivers discharge themselves into the sea by several mouths—as the Nile, the Ganges, the Brahmapootra, the Orinoco, the Mississippi, the Volga, the Danube, the Rhone, and the Rhine.

In some rivers, at spring-tides, there is seen a remarkable phenomenon called the *Bore*. This is a wave rising from five to fifteen feet in height, ascending the river in opposition to its descending current, and, as it rushes onward with its foaming crest, threatening destruction to whatever may oppose its course. In the Amazon it bears the name of the *Rollers*, and is of remarkable height and velocity. In the Hoogly branch of the Ganges it is called *Bora*; at the junction of the Euphrates and the Tigris it is called *Bar*; and at the mouth of the Garonne it is termed *Mascaret*.

Many rivers, in tropical countries, periodically overflow their banks, and the deposits of earthy matter which they leave behind their retiring waters fertilize the soil, and render the use of other manure unnecessary. The people of Egypt watch the rising of the Nile with the greatest anxiety, as their crops depend entirely upon the height to which its waters rise. These overflows are caused by the melting of the snow on the mountains whence the rivers issue, and by the periodical rains in the countries through which they flow.

TABLE exhibiting the Length of the Principal Rivers of the World, the Countries through which they flow, and the Seas, etc., into which they fall.

EUROPE.

| Rivers. | Flow through | Fall into | Length in miles. |
|-------------------------------------|---|-----------------------|---------------------|
| Volga | Russia | Caspian Sea | 2400 |
| Danube | Germany, etc. | Black Sea | 1790 |
| Dneiper | Russia | Black Sea | 1260 |
| Don | Russia | Sea of Azoph. | 1100 |
| Rhine | { Switzerland, Ger- many, and Hol- land | { North Sea | 760 |
| Elbe | Germany, etc. | North Sea | 690 |
| Tagus | Spain and Portugal .. | Atlantic Ocean | 510 |
| Douro | Spain and Portugal .. | Atlantic Ocean | 460 |
| Po | Italy | Adriatic Sea | 450 |
| Seine | France | English Channel | 430 |
| Guadalquivir | Spain | Atlantic Ocean | 290 |
| Severn | England | Bristol Channel | 240 |
| Shannon | Ireland | Atlantic Ocean | 224 |
| Thames | England | German Ocean | 215 |
| Tay | Scotland | German Ocean | 120 |
| Forth, including its Frith | { Scotland | { German Ocean | 115 |

ASIA.

| Rivers. | Flow through | Fall into | Length in miles. |
|--------------------------|----------------------|-----------------------|---------------------|
| Yang-tse-Kiang | China | Pacific Ocean | 3200 |
| Yenisei | Siberia | Arctic Ocean | 2900 |
| Hoang-ho | China | Yellow Sea | 2600 |
| Obi and Irtysh | Siberia | Arctic Ocean | 2500 |
| Lena | Siberia | Arctic Ocean | 2400 |
| Amoor or Saghalien | Mongolia, etc. | Gulf of Tartary | 2300 |
| Euphrates | Turkey in Asia | Persian Gulf | 1700 |
| Indus | Hindustan | Arabian Sea | 1700 |
| Ganges | Hindustan | Bay of Bengal | 1500 |
| Brahmapootra | Assam, etc. | Bay of Bengal | 1500 |
| Oxus or Amoo | Turkestan | Sea of Aral | 1300 |
| Irrawady | E. Peninsula | Bay of Bengal | 1200 |
| Jordan | Palestine | Dead Sea | 150 |

AFRICA.

| | | | |
|------------------------|-----------------------|-------------------------|------|
| Nile | Nubia and Egypt | Mediterranean Sea | 3300 |
| Niger or Quorra | Nigritia | Gulf of Guinea | 2300 |
| Zambezi | Mozambique | Indian Ocean | 1400 |
| Congo or Zaire | Congo | Atlantic Ocean | 1000 |
| Orange or Gariep | South Africa | Atlantic Ocean | 1000 |
| Senegal | Senegambia | Atlantic Ocean | 1000 |
| Gambia | Senegambia | Atlantic Ocean | 1000 |

AMERICA.

| | | | |
|--|--------------------------|---------------------------|------|
| Mississippi, from the source of the Missouri | } United States | Gulf of Mexico | 4265 |
| Amazon or Marañon | | | |
| La Plata and Parana | Brazil | Atlantic Ocean | 4000 |
| St Lawrence (in- cluding the Lakes) | } Canada | Gulf of St Lawrence | 2000 |
| Mackenzie | | | |
| Orinoco | British America | Arctic Ocean | 1600 |
| Rio Grande del Norte | Venezuela | Atlantic Ocean | 1480 |
| Columbia or Oregon | Mexico, etc. | Gulf of Mexico | 1400 |
| Ohio | United States | Pacific Ocean | 1000 |
| Colorado | United States | Mississippi | 1000 |
| Hudson | United States, etc. | Gulf of California | 700 |
| | United States | Atlantic Ocean | 325 |

EXERCISES.

How are springs formed? Describe the different kinds of springs. What is stated of many of the springs in Greenland? in England and Wales, and in Spain? With what is common spring-water generally impregnated? What is a mineral spring? Into how many classes may mineral springs be divided? Describe them. What is said about the general temperature of springs? To what degree do many

springs, which vary from this mean temperature, reach? Give instances. Mention what both cold and hot springs contain in solution. What have the hot springs of San Philipppo in Tuscany formed? Repeat what is said of the buildings of Rome.

How are rivulets formed? What are several rivulets combined called? What does the union of several streams form? What is called the water-shed of rivers? what the basin? What is the principal water-shed of Europe? Name the chief rivers which issue from it. Name the other water-sheds of Europe. What rivers flow from them? How do rivers, when not obstructed, generally flow? What is it said they do in the course of ages? In tropical countries what do they sometimes do? What remarkable fact is stated of the course of most of the greater rivers? Describe a rapid; a cataract; a cascade. What do rivers, especially when flooded, carry down with them? When deposited, what does it form? What do these deltas in many places form? Name some of the rivers which, from this cause, discharge themselves by several mouths. In some rivers, at spring-tides, what remarkable phenomenon is seen? Describe it. By what names is it called in the Amazon, in the Hoogly, at the junction of the Euphrates and Tigris, and at the mouth of the Garonne? What results from many rivers in tropical countries over flowing their banks? Mention what is said of the people of Egypt. By what are these overflows caused?

What is the length of the Volga? the Danube? the Rhine? the Tagus? the Seine? the Shannon? the Thames? and the Tay? Through what countries do they flow? and into what do they fall? What is the length of the Yang-tse-Kiang? the Yenisei? the Amoor? the Euphrates? the Ganges? and the Jordan? Through what countries do they flow? and into what do they fall? What is the length of the Nile? the Niger? the Zambezi? the Orange? and the Senegal? Through what countries do they flow? and into what do they fall? What is the length of the Amazon? the Mississippi? the St Lawrence? the Orinoco? and the Columbia? Through what countries do they flow? and into what do they fall?

LAKES.

Lakes are inland bodies of water entirely surrounded by land, and may be distinguished into four kinds:—1st, Small lakes which receive no stream of running water, and have no outlet: these are generally considered to be craters of extinct volcanoes. 2d, Lakes which receive no streams of water, being fed by springs at the bottom, but have an outlet. 3d, Lakes which both receive and discharge streams of water. And, 4th, Lakes which receive streams of water, but have no visible outlet: these are generally more or less salt.

TABLE of the principal Lakes in the World, with their Area in Square Miles.

EUROPE.

| Name. | Area in Sq. Miles. | Name. | Area in Sq. Miles. |
|----------------|--------------------|-----------------|--------------------|
| Ladoga..... | 6330 | Neagh..... | 156 |
| Onega..... | 3280 | Maggiore..... | 152 |
| Wener..... | 2136 | Neuchâtel..... | 115 |
| Wetter..... | 830 | Lomond..... | 43 |
| Geneva..... | 240 | Tay..... | 15 |
| Constance..... | 228 | Windermere..... | 10 |
| Garda..... | 183 | | |

ASIA.

| | | | |
|------------------------|---------|---------------------|-------|
| Caspian Sea, salt..... | 140,000 | Urumeah, salt..... | 1,800 |
| Sea of Aral, salt..... | 28,000 | Zurrah, salt..... | 1,100 |
| Baikal..... | 20,000 | Dead Sea, salt..... | 360 |
| Balkash, salt..... | 7,000 | Sea of Galilee..... | 76 |

The mean level of the Mediterranean is 83 feet above the Caspian Sea; 329 feet above the Sea of Galilee; and 1312 above the Dead Sea. The saline matters suspended in the water of the Dead Sea amount to about one-fourth of its weight.

AFRICA.

| | | | |
|----------------------|--------|-----------------------|-------|
| Albert-Nyanza..... | ... | Nyanyizi-Nyassa..... | ... |
| Victoria-Nyanza..... | 36,000 | Shirwa..... | 3,600 |
| Tanganyika..... | 30,000 | Dembea..... | 1,480 |
| Tchad..... | 15,000 | Ngami or Mampoor..... | ... |

AMERICA.

| | | | |
|-----------------------|--------|----------------------|-------|
| Superior..... | 43,000 | Great Bear Lake..... | 8,000 |
| Huron..... | 16,500 | Titicaca..... | 4,000 |
| Michigan..... | 13,500 | Nicaragua..... | 3,260 |
| Ontario..... | 12,600 | Athabasca..... | 3,000 |
| Great Slave Lake..... | 12,000 | Chapala..... | 650 |
| Erie..... | 11,000 | Champlain..... | 500 |
| Winnipeg..... | 9,000 | | |

EXERCISES.

What are lakes? and into how many kinds may they be distinguished? Describe the different kinds.

What is the area of the Caspian Sea? Sea of Aral? Lake Baikal? and the Dead Sea? Name the salt lakes of Asia. What is the area of Ladoga? Wener? Geneva? Neagh? Lomond? Tay? Windermere? What is the area of Victoria-Nyanza? Tanganyika? Tchad? Shirwa? and Dembea? What is the area of Superior? Huron? Michigan? Great Slave Lake? and Titicaca?

THE OCEAN.

The ocean is that immense body of salt water which surrounds the globe, and penetrates every coast. Its bed is very irregular, having what may be termed *submarine* mountains, hills, plains, and valleys.

The chief peculiarities of the waters of the ocean are *colour, saltness, temperature, depth, level, and movements.*

The *colour* of the ocean is a deep bluish-green, becoming brighter as it approaches the coasts and the embouchures of great rivers. Particular seas have different colours, produced entirely by local causes. The eastern part of the Mediterranean Sea has a purple tint; the waters in the Gulf of Guinea are whitish; around the Maldive Islands they are black; between Japan and China they are yellowish, from marine plants; they are green to the west of the Azores and Canaries; they are vermillion on the coasts of California; they are reddish at the mouth of the La Plata, and, as the name denotes, in the Red Sea, from the red coral which forms its bed.

All the water of the ocean is *salt*, but the saltness differs slightly in degree. Near the embouchures of great rivers, and in the Arctic and Antarctic regions, where vast masses of ice and snow are melted, and mingle with the sea, the saltness is less than at a great distance from land. Lenz, in his voyage round the world, found the *maximum* of saltness in the Pacific Ocean to be in latitudes 22° north and 17° south; the zone of *minimum* saltness lies a few degrees to the south of the equator. The waters of the ocean contain one-twenty-sixth part of their weight of saline matter, two-thirds of which consist of common salt, and the other third of salts of soda, lime, and magnesia. Minute quantities of *iodine* and *bromine* are found in sea-water.

The *temperature* of the ocean is much more constant than the temperature of the atmosphere, and not subject to such sudden transitions. This arises from water being a slow conductor of heat, absorbing and emitting it much less freely than the atmosphere.

According to Sir James Ross, the whole waters of the ocean, at a depth which varies with the latitude, have a constant temperature of 39½ degrees of Fahrenheit's thermometer, which is also the temperature of water at its greatest density. This constant temperature is found at the equator to be 7200 feet from the surface; and, proceeding south, the depth of constant temperature gradually decreases until at 56° 28' S., the tempera-

ture is uniformly that of the surface. From $56^{\circ} 26' S.$, the depth of constant temperature gradually increases to 4500 feet below the surface, at $70^{\circ} S.$, and again rises as we approach the pole—a remarkable fact, for which no reason, as yet, has been assigned. On the north side of the equator the same changes of temperature have been observed.

The mean temperature of the surface of the ocean, over 10° of latitude on each side of the equator, is 80° Fahrenheit; at the tropics it is about 75° ; in latitude 60° , it is 50° ; in the Arctic and Antarctic Oceans it is 30° , and lower.

The temperature of the surface of the ocean has been observed to be generally lower at mid-day than the temperature of the atmosphere in the shade, and to be always higher at midnight; at sunrise and sunset both temperatures are generally the same. The mean of a given number of observations of the temperature of the surface of the water, and of the temperature of the atmosphere, taken at six o'clock in the morning, at noon, at six in the evening, and at midnight, shows invariably a higher temperature in the sea, in whatever latitude the observations are made. The mean temperature of the surface of the ocean, at some distance from any continent, is higher than the mean temperature of the atmosphere with which they are in contact; and the sea, over a bank, is always colder than in places where the water is deeper, the difference being greater the higher the bank. This diminution of temperature might be turned to use in forewarning the navigator of approaching danger, and, if carefully attended to, would be the means of saving life and property. It is pleasing to reflect that, even in the vast ocean, the dangers which beset the path of man are indicated by an invariable law of nature.

The *depth* of the ocean varies from a few feet to several miles. In the Arctic Sea, Captain Scoresby sounded with a very heavy lead to the depth of 7200 feet, and found no bottom; and Sir James Ross, in the Atlantic Ocean, in latitude $15^{\circ} 3' S.$, and longitude $23^{\circ} 14' W.$, found no bottom with a line of 27,600 feet (nearly $5\frac{1}{4}$ miles). This is nearly equal to the height of Mount Everest, the highest of the Himmaleh Mountains (29,002 feet). Even greater depths are said to have been reached.

The surface of seas which directly communicate with each other, must be considered as uniform in elevation. Local causes and prevailing winds and currents, however, in extensively *landlocked* seas—the Red Sea, for example—have produced per-

manent but inconsiderable differences of *level*. At the Isthmus of Suez, the surface of the Red Sea has been ascertained to be about seven and a half feet at high water above the level of the Mediterranean, but much less at other times. Corabœuf and Delcroz, two eminent mathematicians and astronomers, in their geodetical survey of the Pyrenees from the Mediterranean to the Atlantic, found no appreciable difference in the level of these seas.

The *movements* of the waters of the ocean consist of *Tidal waves*, *Wind waves*, and *Currents*. The *Tidal* wave is caused by the attraction of the sun and the moon. At new and full moon, the highest tides, termed *Springs*, are produced by the combined action of the sun and the moon. The tides gradually decrease to the quarters, when the sun's attraction acts at right angles to that of the moon, and then we have the lowest tides, called *Neap-tides*. The phenomena of the flow and ebb of the tide are common to all seas, with the exception of very small or landlocked seas, in which the tide, though it may exist, is imperceptible. In the open ocean, the tide seldom rises more than a few feet. At St Helena, the greatest rise is only 3 feet; at Tahiti it is scarcely perceptible; at St Malo it is 50 feet; at Bristol it is 40 feet; and in the Bay of Fundy, Nova Scotia, it is said to be from 65 to 70 feet. Such extraordinarily high tides are caused by the conformation of the coasts and the narrow channels through which the great waters of the ocean are forced.

The action of the winds upon the surface of the ocean produces waves of various heights, the greatest probably not exceeding 40 feet. The height of waves produced by storms generally averages from 10 to 20 feet; but though only the surface of the ocean is agitated at the place where the storm is raging, yet at very great distances from that spot, an under movement of the waters, called a *ground-swell*, is felt. At Leith a *ground-swell* is observed *three or four* days after a hurricane in the West Indies.

The currents of the ocean, which exercise so great an influence on the intercourse of nations, on the present aspects of the land, and on the climate of the seashores, present this remarkable spectacle,—they cross the ocean, of definite breadths, in different directions, and in the same manner as rivers; the unmoved neighbouring watery strata forming, as it were, the banks of the streams. The general motion of the sea between the tropics from east to west, known as the equatorial current, is regarded

as the consequence of the advancing times of the tides and of the *Trade Winds*. The resistance of the east coasts of the continents which the current encounters, alters its direction.

The narrow currents which pursue their course through the ocean, are found to be warmer than the sea in high, and colder in low latitudes. This is observed in the celebrated *Gulf Stream*. The beginning of this immense current is to the south of the Cape of Good Hope, whence it follows the African coast to the Gulf of Guinea. Then stretching to the west, it debouches from the Caribbean Sea and the Gulf of Mexico, through the Gulf of Florida, running to N.N.E.; gradually getting farther and farther from the coast of America, it turns off eastward by the banks of Newfoundland, and crosses the Atlantic, frequently throwing the seeds of tropical plants upon the coasts of Ireland, Scotland, and Norway. The prolongation of the stream to the north-east tends to mitigate the cold both of the sea and of the climate about the North Cape of Norway. The warm water of the Gulf Stream, after it has turned eastward from the banks of Newfoundland, and at no great distance from the Azores, sends off a branch to the southward. It is here that the great mass of seaweed is met with which made so strong an impression on the minds of Columbus and his companions, and was named by Oviedo the seaweed meadow.

The great current of the Pacific Ocean brings the cold water of the high southern latitudes to the coasts of Chili and Peru, first from south to north, and then from the Bay of Arica from S.S.E. to N.N.W. In the middle of the tropics, at certain seasons of the year, the temperature of the waters of this cold stream is not higher than 60° ; the temperature of the motionless water by which it is bounded being as high as from $81\frac{1}{4}^{\circ}$ to $84\frac{1}{2}^{\circ}$ Fahr. Where the seaboard of South America, near Payta, advances farther to the west, this stream turns suddenly in the same direction from off the coast, and takes a course from east to west; so that those sailing northwards come from a colder to a warmer sea.

EXERCISES.

Describe the ocean. Of what does its bed consist? Mention the chief peculiarities of its waters. Of what colour is the ocean? On what do the different colours of particular seas depend? Mention the colour of some seas, etc. Is all the water of the ocean of the same degree of saltness? Where is the saltness less? What do the waters of the ocean contain? What else are found in sea water? What is stated of the temperature of the ocean? Whence does this arise? What is the constant temperature of the waters of the ocean at a dep'th which varies with the latitude?

At what depth is this constant temperature found at the equator? at lat. $56^{\circ} 26'$? and at lat. 70° ? Give the mean temperature of the surface of the ocean in different latitudes. What has been found by observation respecting the temperature of the ocean and the temperature of the atmosphere? What is observed of the sea over a bank? How may this diminution of temperature be useful? What natural reflection arises from this? What is stated of the depth of the ocean? What is stated of the soundings of Captain Scoresby, and Sir James Ross? of deep soundings generally? What is stated of the surface of seas which directly communicate with each other? What have produced permanent but inconsiderable differences of level in landlocked seas?

Of what do the movements of the waters of the ocean consist? By what is the tidal wave caused? When and how are spring-tides produced? When have we the lowest tides, and what are they called? What is stated of the ebb and flow of the tide? In the open ocean, what is the rise of the tide? at St Malo? Bristol? the Bay of Fundy? By what are such high tides caused? Of what height are waves produced by the action of the winds upon the waters of the ocean and by storms? What is felt at a very great distance from the place where a storm is raging? What is stated of Leith?

What remarkable spectacle do the currents of the ocean present? What is the motion of the sea between the tropics? and of what is this the consequence? What alters the direction of the equatorial current? Where does the Gulf Stream begin? Describe its course. On the coasts of what countries does it throw the seeds of tropical plants? What does the prolongation of this stream to the north-west tend to do? What is found near the Azores? and on whose minds did it make a strong impression? What was it named? Mention what is said of the great current of the Pacific Ocean. What is stated of its temperature in the middle of the tropics at certain seasons of the year?

THE ATMOSPHERE.

The atmosphere, or that gaseous fluid which surrounds the earth and ocean, performs most important functions in the economy of nature. The chemical analysis of dry air shows that it contains, per volume, $20\frac{1}{8}$ th oxygen, $79\frac{7}{8}$ th azote, from 1 to 5 hundredths carbonic acid, and a small portion of sulphuretted hydrogen, with slight traces of ammoniacal vapours. Besides these substances, which under all circumstances, and in every situation, are essentially combined in the atmosphere, others may be accidentally mixed with them, especially near the surface of the earth, though their chemical nature has not yet been subjected to analysis. The putrefactions of animal and vegetable matter which are continually going on, give rise to miasmatic vapours which produce fevers of aguish and typhoid types, besides those diseases to which the young are peculiarly liable.

The atmosphere is supposed to extend to forty-five or fifty miles above the earth, gradually diminishing in density as we proceed upwards. The weight of the atmosphere in a mean state is ascertained by the aid of the barometer to be the same as a column of mercury about 30 inches in height. It thus presses with a weight of 15 pounds avoirdupois on every square inch of surface. Were its density uniform throughout its entire height, it would only extend to a height of 27,000 feet, or about five miles; but its density decreases in a geometrical ratio, while the height increases in an arithmetical ratio; so that at two miles in height its density is reduced to two-thirds, or to about twenty inches of mercury. For every 950 feet of elevation above the level of the sea, there is a diminution of pressure of about one inch of mercury.

The whole weight of the atmosphere has been estimated at five quadrillions, two hundred and eighty-seven trillions, three hundred and fifty billions of tons.

The atmosphere is essential to the existence of animal and vegetable life. It supplies oxygen for respiration, and affords to vegetables a great portion of their carbon. Without it no organized being could exist, and there would be neither rain nor dew to moisten the ground. It is the great vehicle of sound, and its refractive power diffuses the light of the sun, or any other luminous body, in all directions. Its reflective quality continues the light of the sun, in our latitude, for at least two hours before sunrise and two hours after sunset; this reflected light being what we call *Twilight*. The atmosphere is the grand agent which, by tempering the extremes of heat and cold, renders every portion of the earth's surface habitable to man.

EXERCISES.

What is the atmosphere? What does the chemical analysis of dry air show? What give rise to miasmatical vapours? What do these vapours produce? How far is the atmosphere considered to extend above the earth? What is the mean weight of the atmosphere? With what weight does it press on every square inch of surface? Were its density uniform, to what height would it extend? At what has its whole weight been estimated? To what is the atmosphere essential? What would be the effects of the want of an atmosphere? Mention some instances of its beneficial agency.

WINDS.

Wind is air put in motion in some particular direction, and is caused chiefly by the heat of the sun. Heat expands air pro-

digiously; each degree of heat of Fahrenheit's scale producing an expansion of a 490th part: the heated air, being thus rendered specifically lighter than the colder, rises in the atmosphere, when its place is supplied by a rush of cooler air, and this causes a current, which we call *wind*. A change in the quantity of gaseous vapour suspended in the atmosphere may disturb its equilibrium, and thus produce currents.

The sun when vertical at any place, heats and expands the air directly below; and as the colder air rushes in from all quarters to the heated point, as the earth revolves on its axis from west to east at an almost inconceivable velocity, and as the expanded portion of the air is thus continually moving farther to the east, we should have at the equator a regular east wind. *Trade-Winds* extend from the equator to 28° or 30° north and south latitude. From about 3° to 10° north latitude, there is a zone of variable winds or calms, on each side of which the trade-winds blow; the N.E. and S.E. trade-winds meeting in this zone have the effect of producing these calms or variable winds. It is obvious, that when the air in the torrid zones is expanded by the solar heat, the cooler and denser air at the poles will rush towards the equator; and since the velocity of the different points of the earth's surface, in its rotation on its axis, increases from the poles to the equator, the air which rushes from the north and south will fall behind the meridian on which it began its motion, and will, as it approaches the equator, gradually acquire a motion more and more from the east. These two motions combined will therefore produce a N.E. wind on the north side of the equator, and a S.E. wind on the south side. After undergoing rarefaction by the sun's heat, the air rises to the upper point of the atmosphere and returns towards the poles; and gradually losing its heat it descends, and would form a south wind in the northern hemisphere, and a north wind in the southern hemisphere, were it not deflected towards the east by the diurnal motion of the earth becoming less rapid as we recede from the equator. In consequence of this, the wind acquires a motion from the west as well as toward the poles, and therefore, in the north temperate zone, S.W. winds prevail, and in the south temperate zone, N.W. winds prevail.

Periodical Winds or Monsoons.—The region of these winds extends from the coasts of Africa to about 140° of east longitude. and from about 3° south of the equator to the southern coasts of Asia. They prevail with the greatest force and regularity be-

tween Hindostan and Africa; they are less regular and weaker in the Bay of Bengal, in the Chinese Sea, and in the Sea of Japan, being modified by the peculiar formation of the adjoining land. When the sun is in the northern hemisphere, the south-west monsoon blows over the Indian Ocean; and when the sun is on the southern side of the equator, the north-east monsoon prevails. When the sun passes the equator, the force of the monsoon gradually becomes weaker, and the zone of calms and variables is alternately agitated by heavy gales, violent thunderstorms, frightful tornadoes, and sudden calms. From three to four weeks after the equinoxes, the monsoon changes, and when fairly set in, blows with great regularity during the next six months. The north-east monsoon extends to about 3° south of the equator; it blows from November till March; in January it is most regular, and is felt in its greatest force. The south-west monsoon prevails from about the end of April to the middle of October, but is not felt farther south than about the third degree of north latitude. In a zone of from 3° to 10° degrees south, when the sun is north of the equator, south-west and north-west winds prevail; and during the rest of the year, south-east and north-east winds blow, which have been improperly called monsoons. The monsoons are generally attributed to the same causes which produce the trade-winds, modified by the peculiar form of the land lying around and within the Indian Ocean. Strong currents, which change with the monsoons, are found in the Arabian Sea.

Sea and Land Winds.—Sea and land winds blow upon the mountainous lands of the torrid zone, and in warm weather they occur in the temperate zones. In moderate weather the wind blows from seaward from 9 A.M. till noon, and in some instances from 1 P.M. till about midnight, and is called the sea-breeze; it then changes and blows from the land towards the sea, and is called the land-breeze. These winds are occasioned by the rarefaction of the air on the surface of the land during the day, and by the diminution of its temperature during the night. The sea, preserving a more equable temperature than the land, communicates it to the superincumbent air; and as the land can only gradually heat the air above it, decided changes of temperature can only occur at considerable intervals after the rising and setting of the sun.

In the temperate and frigid zones the winds are more irregular than in the torrid zone, and generally blow with greater force

than the regular winds. Some of these winds, however, occur more frequently than others, and are called the prevailing winds; as the west winds in the temperate, and the east winds in the frigid zones. Winds blowing for a considerable time over highly-heated land, without coming in contact with water—as in the Sahara in Africa and in the Arabian deserts—become heated, scorching, and suffocating, so as to produce great suffering, and even death itself; these are called *Simooms*. A burning south-east wind, called the *Sirocco*, is often felt in Italy, Sicily, and Malta.

Hurricanes.—These terrible rotatory storms, which occur only in their greatest violence in the torrid zone, have been supposed to be great masses of air many miles in diameter, revolving round a central point (where it is quite calm), having a circular progressive motion. It is remarkable that hurricanes occurring in the same hemisphere, always revolve in the same direction, and that the direction of rotation in the one hemisphere is contrary to that in the other. In the Indian Ocean and the Chinese Sea, hurricanes are called *Typhoons* or *Tornadoes*; in other places they have been called *Whirlwinds*, *Waterspouts*, *Landspouts*, *Sand-pillars*, *White-squall*, *Pamperos*, etc.

TABLE of the Velocity and Force of the Winds.

| Velocity. | | Force on one square foot in lbs. Avoir. | Character of the wind. | Velocity. | | Force on one square foot in lbs. Avoir. | Character of the wind. |
|-----------------|------------------|---|------------------------|-----------------|------------------|---|------------------------|
| Miles per hour. | Feet per second. | | | Miles per hour. | Feet per second. | | |
| 1 | 1.47 | .005 | Hardly perceptible. | 20 | 29.33 | 1.968 | Very brisk gale. |
| 2 | 2.93 | .020 | | 25 | 36.67 | 3.075 | |
| 3 | 4.40 | .044 | Just perceptible. | 30 | 44.00 | 4.429 | High winds. |
| 4 | 5.87 | .079 | | 35 | 51.33 | 6.027 | |
| 5 | 7.33 | .123 | Gentle pleasant wind. | 40 | 58.67 | 7.873 | Very high winds. |
| 6 | 8.80 | .177 | | 45 | 66.00 | 9.963 | |
| 7 | 10.27 | .241 | Moderate breeze. | 50 | 73.33 | 12.300 | Storm or tempest. |
| 8 | 11.73 | .315 | | 55 | 80.67 | 14.883 | |
| 9 | 13.20 | .399 | Pleasant brisk gale. | 60 | 88.00 | 17.715 | Great storm. |
| 10 | 14.67 | .492 | | 65 | 95.33 | 20.787 | |
| 11 | 16.13 | .595 | Hurricane. | 70 | 102.67 | 24.108 | Destructive hurricane. |
| 12 | 17.60 | .708 | | 75 | 110.00 | 27.675 | |
| 13 | 19.07 | .831 | | 80 | 117.33 | 31.490 | |
| 14 | 20.53 | .964 | | 85 | 124.67 | 35.547 | |
| 15 | 22.00 | 1.107 | | 90 | 132.00 | 39.852 | |
| | | | | 100 | 146.67 | 49.200 | |

EXERCISES.

What is wind? and by what is it caused? To what extent is air expanded by heat? Explain how trade-winds are produced. Mention the region of these winds. Where is there a zone of variable winds or calms? What produces these calms or variable winds? Explain the causes of the trade-winds more minutely. After the air has undergone rarefaction by the sun's heat, what takes place? What is the consequence? How does the diurnal motion of the earth affect the winds? What winds therefore prevail in the northern and southern temperate zones?

What is the extent of the region of periodical winds or monsoons? Where do they prevail with the greatest force and regularity? and where are they less regular and weaker? By what are they modified in those seas? What takes place when the sun passes the equator? How long after the equinoxes does the monsoon change? When fairly set in, how long does it blow with great regularity? When does the north-east monsoon blow? When is it most regular, and in its greatest force? When does the south-west monsoon prevail? To what causes are monsoons generally attributed?

Describe the sea and land winds. By what are these winds occasioned? What is stated of these winds in the different zones? What is stated of winds blowing over the Sahara and Arabian deserts? and what do they produce? What are they called? What is the sirocco? and where is it felt? Where do hurricanes occur in their greatest violence? What have they been supposed to be? State what is remarkable respecting them. What have they been called in the Indian Ocean and Chinese Sea? What in other places? What is the character of the wind which blows at from 7 to 9 miles an hour; at from 50 to 55 miles; at from 75 to 85; and at from 90 to 100?

AQUEOUS VAPOURS.

There are suspended in the atmosphere vast masses of aqueous vapours, which are chiefly supplied by evaporation from the surface of the ocean and the other waters of the globe. The land, animals, and vegetables, also afford a continual supply. Vapour is continually being diffused in all directions from its source, with a force proportional to the temperature of the water, subject however to the opposing force of the vapour already in the air; so that, if the space above the water be saturated with moisture, no vapour can arise, the force of evaporation being neutralized by the saturated space above it. Evaporation is much greater in the torrid zone than in the temperate or the frigid zones; yet even at the poles, though covered with the ice of ages, it goes on to a certain extent. From a square mile of water, 6·914 tons—from every man, 35 cubic inches—are daily diffused. So long as this immense quantity of vapours is held in close union with the air, it neither affects its

transparency nor are the vapours themselves visible. Should the temperature of the air be lowered when it is fully saturated with moisture, part of the vapour will be condensed and become visible as *clouds*, or will hover over the surface of the earth as *mists*, or descend to the earth in the form of *rain*, *hail*, or *snow*.

Dew.—The formation of dew is caused by the cooling of the earth by radiation till its temperature is below that of the air above. Dew is most abundantly deposited in clear starry evenings, or when a cold night succeeds a warm day; and it is much more plentiful in the tropical than in any other regions of the earth. When dew is deposited upon bodies of much lower temperature than the air, it immediately freezes, and forms *hoar-frost* or *white-frost*. The quantity of dew deposited annually on the earth is said to be about five inches.

Mists or *Fogs* are merely clouds resting upon the earth. They are rare in the torrid zone, but increase in frequency towards the poles, where they are almost constant. For the formation of mists, a certain degree of cold is necessary; before a warm sun they either disappear altogether by rising high into the atmosphere, or, if still seen, they take the form of clouds. Land and water are cooled after sunset in a very different manner: the cooling of the land is limited to its surface, and very slowly admitted into the interior; but in water, when the upper portion is cooled down, it sinks, and its place is supplied by warmer water from below. The surface of the water in calm and clear weather, and in temperatures above 50°, will therefore be warmer than that of the adjacent land; and hence, when the cold air from the land mixes with the air above the water, each of them containing its proper portion of aqueous vapour, the result will be a mist or fog.

Rain.—The air on becoming warmer, becomes also drier, and thus at the same time capable of absorbing more moisture; but when it cools down, it becomes less capable of containing moisture, and must therefore part with it in the form of rain. The quantity of moisture which air can contain increases in a higher ratio than that of its temperature; it is therefore obvious that the intermingling of two completely saturated portions of air of different temperatures, must cause the resulting mass to part with a portion of its moisture in the form of rain. The frequency, and quantity of rain, at any place, depend partly upon the changes of local temperature, partly on the currents of the whole atmosphere. Rain is most abundant at the equator,

and diminishes in quantity towards the poles ; it is more plentiful on the seacoast than inland, and in mountainous districts than in low plains. Though more rain falls at the equator than elsewhere, there are fewer days of rain there than anywhere else. The rain-drops in tropical regions are said to be sometimes an inch in diameter ; in the temperate zones they seldom exceed a few lines. Elevations of the land have a very decided effect upon the quantity of rain. Mountains are the occasion of rain, not so much from their attracting clouds to their summits, as from their effects in disturbing the temperature of the atmosphere. It is obvious that snow-clad mountains, from the uniformity of their temperature, will not have the same effect in precipitating humidity as mountains whose sides are bare or covered with grass ; and also, that in temperate climates the rain on all mountains will be less abundant in winter than in summer. It is farther obvious, that in all cases the quantity of rain at the bottom of a mountain will be greater than at the top.

Before rain falls we usually see the clouds moving to a particular spot, about which they gradually accumulate until the whole expanse of the sky is obscured. It is a singular fact, that clouds collect together at a great height in the atmosphere, where the air is less moist than in the lower strata. Rain has sometimes fallen when the atmosphere was perfectly serene. Instances of this curious phenomenon have occurred at Paris, Geneva, and Constantinople, and often in the Mauritius at night, when not a cloud was to be seen. There are several tracts in the torrid zone where rain seldom or never falls, as in the Sahara or African desert, the low coasts of Venezuela in South America, and the desert coasts of Peru. In the torrid zone, and on that side of the equator in which the sun's place is, heavy rains fall daily from about noon till the evening, when they cease ; the sky is then clear and cloudless till near the middle of the ensuing day, when the clouds begin to gather, and the rain again commences. The periodical rains in India are regulated by the monsoons. During the S.W. monsoons, the wet season prevails on the west coast of Hindostan, the rains being most copious in the month of July. In the tableland in the interior of the peninsula, the rains are less frequent ; while on the eastern coast, the sky is unclouded, and the dry season prevails. When the N.E. monsoon sets in this state of things is reversed ; the rains descend abundantly on the east coast, the central plateau has less rain, on the west coast no rain falls.

In several places there are two wet and two dry seasons in the year; and from the effect of mountain-ranges and peculiar winds, places in regions under the same parallel of latitude have their wet and dry seasons at opposite periods. As has been already stated, more rain falls in summer than in winter, in all latitudes; but in the temperate zones there are fewer days of rain in summer than in winter. The mean annual fall of rain in England has been estimated at 31·3 inches.

The mean annual fall of rain, as observed at 147 places between 10° and 60° north latitude, according to M. Cotta, is 34·7 inches. If we take 34 inches as the mean annual fall on the whole earth, the quantity of water thus accumulated on the surface of the globe in one year will be more than 91,750 cubic miles of water; and of this, according to the proportion of dry land to water, 30,960 cubic miles will fall upon the dry land. It has been estimated that the sea receives annually from rivers 13,140 cubic miles of water, and it must consequently supply an equal evaporation to the atmosphere, in order to prevent the dry land from being entirely drained of its moisture.

Snow.—When the particles of aqueous vapour, in their descent towards the earth, are formed into separate crystals of ice, and afterwards united together so as to reflect light to the eye in great abundance, thus producing the sensation of whiteness,—this assemblage of crystals constitutes snow. *Hailstones* are formed in the same manner as *rain*; the loss of heat in the descending particles of vapour being greater and more rapid when hailstones are formed than when the vapour descends in the form of rain or snow.

The remarkable phenomenon of *Red Snow*, found both in the Alps and in the Arctic regions, long perplexed philosophers. At length, in 1839, the researches of Mr Shuttleworth, an English gentleman, led the way to its explanation. In his microscopical examination of the new-fallen red snow of the Alps, he discovered an immense number of active animalculæ of various sizes and forms, and other bodies which he considered as algæ. In 1840, Professor Agassiz of Neufchatel, after many examinations of the red snow, confirmed the observations of Mr Shuttleworth; and Professor Mayer, upon a more careful examination, found that those portions which were considered plants, were also animalculæ; and it is now generally believed that the redness of the snow is caused by the presence of a great number of minute animated beings.

EXERCISES.

What are suspended in the atmosphere, and how are they supplied? What is stated respecting the diffusion of vapour? In what region is evaporation greatest? Give instances of the quantity of evaporation. What takes place if the temperature of the air be lowered when it is fully saturated with vapours? By what is the formation of dew caused? When is it most abundantly deposited, and in what region is it most plentiful? What occurs when dew is deposited upon bodies of much lower temperature than the air? What quantity of dew is said to be annually deposited on the earth? Describe mists or fogs. What is necessary for the formation of mists? Mention what is stated respecting the cooling of land and water after sunset.

What is said of air in producing rain? On what do the occurrence and quantity of rain at any place depend? Where is rain most abundant? Whether is it more plentiful on the seacoast or inland, and in mountainous districts or in low plains? Where are there fewest days of rain? Of what size are rain-drops sometimes in tropical regions, and in the temperate zones? What have a marked effect upon the quantity of rain? Mention what is stated of snow-clad mountains? Is the quantity of rain greater at the bottom or at the top of a mountain? What do we usually see before rain falls? What curious fact is stated respecting the collecting of clouds? Where has rain sometimes fallen when the atmosphere was serene?

In what tracts in the torrid zone does rain seldom or never fall? What is stated of the rains in the torrid zone on that side of the equator in which the sun's place is? By what are the periodical rains in India regulated? Describe the rains, etc., in Hindostan during the monsoons. What kind of seasons are said to be in several places in the year? What effect have mountain-ranges and peculiar winds on these seasons? At what has the mean annual fall of rain in England been estimated? What is the mean annual fall of rain on the globe in cubic miles? What proportion falls on the dry land? What is the estimated quantity of water which the sea receives annually from rivers?

Describe the manner in which snow is constituted. How are hailstones formed? Where is red snow found? What is stated of this remarkable phenomenon? What led the way to its explanation? In his microscopical examination, what did Mr Shuttleworth discover? Who confirmed his observations? What is now the generally received opinion?

ANCIENT GEOGRAPHY.

ANCIENT GEOGRAPHY means the geography of the parts of the world known to the ancient Greeks and Romans; for our knowledge of the world in old times is derived chiefly from them. They were acquainted with the countries touching or near to the Mediterranean Sea; that is, the south-west and south of Europe, the south-west of Asia, and the north of Africa.

They had a very imperfect knowledge of northern and eastern Europe, of India south of the Sutlej, or of the rest of Asia beyond the Ganges. Of Africa they were acquainted with the parts adjoining the Red and Mediterranean Seas, slightly with the west coast nearly as far as the equator, and with the east coast a little south of that line.

EUROPA (EUROPE).

COUNTRIES.—Hispania, Spain and Portugal; Gallia, France, Belgium, and the west of Switzerland; Germania, Germany; Cimbrica Chersonesus, Denmark; Scandinavia, Norway and Sweden; Sarmatia Europaea, Poland and Russia; Rhaetia, the eastern cantons of Switzerland and the Tyrol; Vindelicia, Bavaria, south of the Danube; Noricum, Austrian Germany, south of the Danube; Pannonia, Hungary, west of the Danube; Illyricum, Croatia, Dalmatia, and part of Turkey; Italia, Italy; Graecia, the modern kingdom of Greece, with part of Roumelia in Turkey; Epirus, part of Albania; Macedonia, Macedonia, the western part of Roumelia; Thracia, Thrace, the eastern part of Roumelia; Moesia, Servia and Bulgaria; Dacia, Transylvania and Wallachia.

ISLANDS.—Britannia, Britain; Hibernia, Ireland; Orcaades, the Orkney Islands; Thule, Shetland Islands or Iceland; Baleares, Majorca and Minorca; Corsica; Sardinia; Sicilia; Melita, Malta; Creta, Candia; Euboea, Negropont.

SEAS, GULFS, and STRAITS.—Codanus Sinus or Mare Suevicum, the Baltic Sea; Oceānus Germanicus, the North Sea or German Ocean; Fretum Britannicum or Gallicum, the Straits of Dover; Mare Britannicum, the English Channel; Oceānus Cantabricus, the Bay of Biscay; Mare Atlanticum, the Atlantic Ocean; Fretum Gaditanum or Herculeum, the Straits of Gibraltar; Mare Internum, the Mediterranean Sea; Sinus Gallicus, the Gulf of Lyons; Sinus Ligusticus, the Gulf of Genoa; Taphros or Fossa, the Straits of Bonifacio; Mare Inferum, Tyrrhenum, Etruscum, the Tuscan Sea, on the west of Italy; Mare Sup̄erum, Illyricum, or Hadriaticum, the Adriatic Sea

or Gulf of Venice; Sinus Tergestinus, the Gulf of Trieste; Fretum Siculum, the Straits of Messina; Sinus Tarentinus, the Gulf of Taranto; Mare Africum, the sea between Sicily and Africa; Mare Ionium, the Ionian Sea, on the west of Greece; Mare Creticum, the sea on the north of Crete; Mare Aegaeum, the Archipelago; Hellespontus, the Straits of the Dardanelles; Propontis, the Sea of Marmora; Bosphorus or B. Thracius, the Straits of Constantinople; Pontus Euxinus, the Black Sea; Bosphorus Cimmerius, the Straits of Caffa; Palus Maeotis, the Sea of Asov.

HISPANIA,—called also *Iberia*.

BOUNDARIES.—The Atlantic Ocean, the Pyrenees, and the Mediterranean.

DIVISIONS.—At first, into a northern portion, near Italy and Gaul, Hispania Citerior, and a southern portion, Hispania Ulterior. During the time of Augustus, the former of these was called *Tarraconensis* from its capital Tarraco; and H. Ulterior was divided into *Baetica*, including Andalusia and Granada; and *Lusitania*, comprehending Estremadura and Salamanca, with nearly all Portugal.

PRINCIPAL MOUNTAINS, &c.—*Pyrenaei Montes*, the Pyrenees;—**RIVERS.** *Durius*, the Douro; *Tagus*, the Tajo or *Tagus*; *Anas*, the Guadiana; *Baetis*, the Guadalquivir; *Iberus*, the Ebro;—**CAVES.** *Promontorium Sacrum*, Cape St Vincent; *Prom. Artabrum*, Cape Finisterre; *Calpe*, the Rock of Gibraltar, with *Abŷla* on the African coast, forming the *Pillars of Hercules*;—**ISLANDS.** *Baleares*, and *Pityūsae*, including *Ebŷsus*, *Iviza*; and *Ophiusa*, *Formentera*.

GALLIA TRANSALPINA.

BOUNDARIES.—The Atlantic Ocean, the English Channel and North Sea, the Rhine, the Alps, the Mediterranean, and the Pyrenees.

DIVISIONS.—At first, among the *Aquitāni*, between the Pyrenees and the Garonne; the *Celtae*, occupying the district from the Mediterranean and the Garonne to the Seine; and the *Belgae*, between the Seine and the Rhine. About 120 B. C., the Romans gave the name of *Provincia*, or *Gallia Braccāta*, to the district they had conquered between the Cevennes and the Alps; the rest being termed *Gallia Comāta*. In the time of Augustus, about 27 B. C., the whole country having been conquered previously by Julius Cæsar, it was divided into four provinces;—*Provincia*, or *Gallia Narbonensis*, extending from the Lake of Geneva and the Alps to Aquitania, and from the Cevennes to the Mediter-

ranean;—Aquitania, including the country from the Pyrenees to the Loire;—Gallia Celtica or Lugdunensis, the country between the Loire and the Seine;—and Gallia Belgica, between the Seine and the Rhine.

PRINCIPAL MOUNTAINS, RIVERS, &c.—Pyrenæi Montes; Cebenna, the Cevennes; Jura Mons, Mount Jura;—Rhodanus, the Rhone; Arar, the Saone; Garumna, the Garonne; Liger, the Loire; Sequana, the Seine; Rhenus, the Rhine; Mosella; Lacus Lemanus, the Lake of Geneva.

ITALIA,—called also *Hesperia*, *Ausonia*, and *Oenotria*.

BOUNDARIES.—The Alps, the Adriatic, the Ionian, Sicilian, and Tuscan Seas.

DIVISIONS.—*Three* in the north,—I. Liguria; II. Gallia Cisalpina; and III. Venetia and Histria.—*Eight* in the middle,—IV. Etruria or Tuscia; V. Umbria; VI. Picenum; VII. Vestini, Marrucini, Peligni, Marsi; VIII. Sabini; IX. Latium; X. Campania; XI. Samnium and the Frentani.—*Three* in the south,—XII. Apulia; XIII. Lucania; XIV. Bruttii.

LIGURIA extended from the Gulf of Genoa to the Po and Cisalpine Gaul, and from the Maritime Alps to Tuscany.—GALLIA CISALPINA, called also Gallia Citerior or Togata, was bounded on the west and north by the Alps, on the east by Venetia and the Adriatic, on the south by Umbria, Etruria, and Liguria. Towards the east it was divided by the Po into Transpadana and Cispadana.—VENETIA with HISTRIA extended from the Adriatic to the Alps, and from Gallia Cisalpina to Illyricum.

ETRURIA adjoined the Tuscan Sea and Liguria.—UMBRIA had the Tiber and Etruria on the west, Cisalpine Gaul and the Adriatic on the north.—PICENUM lay between Umbria and Sabinum on the west, and the Adriatic on the east.—SABINUM had Etruria and Umbria on the west, Umbria on the north, and the Apennines on the east.—The VESTINI, MARRUCINI, PELIGNI, and MARSI, had Sabinum on the west, Picenum on the north, the Adriatic and the Frentani on the east, and Latium on the south.—LATIUM had the Tuscan Sea on the south, extending from the mouth of the Tiber to Campania.—CAMPANIA extended south-east along the Tuscan Sea from Latium on the north-west to Lucania at the south-east.—SAMNIUM was bounded on the west by Campania and Latium, on the north by the FRENTANI, who occupied the coast between the Marrucini and Apulia.

APULIA was the south-eastern part of Italy, from Samnium and the Adriatic to the Gulf of Taranto and Lucania.—

LUCANIA lay from the Tuscan Sea and Latium to the Gulf of Taranto.—The BRUTTII occupied the southern extremity of Italy.

PRINCIPAL PUBLIC WAYS.—*Via Aurelia*, north-west from Rome, along the coasts of Etruria and Liguria; *Via Clodia* and *Via Cassia*, north through Etruria; *Via Flaminia*, north through Umbria to Ariminum; *Via Aemilia*, from Ariminum, north-west through Cisalpine Gaul to Mediolanum (Milan); *Via Valeria*, through Tibur (Tivoli), east and north-east to Hadria (Atri); *Via Latina*, south-east through Latium to the Via Appia at Capua; *Via Appia*, from Rome south-west to Capua, thence to Beneventum and Brundisium on the Adriatic; *Via Aquilia*, from the Appian Way at Capua, by the coast of the Bruttii to Rhegium (Reggio), on the Straits of Messina.

PRINCIPAL MOUNTAINS, RIVERS, &c.—Alpes, the Alps; Apenninus Mons, the Apennines; Soracte, St Oreste, in Etruria; Mons Sacer, in Sabinum; Mons Albānus and Mons Algidus, in Latium; Mons Massicus and Vesuvius, in Campania; Gargānus and Vultur, in Apulia.—Padus or Eridānus, the Po; Athēsis, the Adige; Rubico, the Fiumicino;—Crater, Campānus, Cumānus, or Puteolānus Sinus, the Bay of Naples; Paestānus Sinus, the Gulf of Salerno;—Minervae or Surrentinum Promontorium, Cape Campanella; Gargānus prom., Cape Viesti; Japygium or Salentinum prom., Cape Leuca.

GRAECIA or HELLAS (GREECE).

BOUNDARIES.—West, the Ionian Sea; North, Macedonia; East, the Aegean Sea; South, the Mediterranean Sea.

DIVISIONS.—PELOPONNESUS, the Morea; GRAECIA PROPRIA, Livadia; THESSALIA (or Aemonia), Thessaly; EPIRUS, the southern part of Albania.

GULFS.—Ambracius Sinus, the Gulf of Arta, south of Epirus; Corinthiācus Sinus, the Gulf of Lepanto; Messeniācus Sinus, the Gulf of Coron. and Laconicus Sinus, the Gulf of Colokythia, south of the Morea; Argolicus Sinus, the Gulf of Napoli; Saronicus Sinus, the Gulf of Egina.

DIVISIONS OF PELOPONNESUS.—In the north, Achaia, including besides Achaia proper, Corinth, Sicyon, and Phlius; Elis, in the west, divided into Coele Elis, Pisātis, and Triphylia; Messenia, in the south-west; Laconia, in the south-east; Argōlis, in the east; and Arcadia, in the centre.

GRAECIA PROPRIA extended from Albania and Thessaly on the north, to the Gulf of Patras, the Gulf of Lepanto, Isthmus of Corinth, and Gulf of Egina.—DIVISIONS. Megāris, west the Isthmus; Attica, north-east of the Gulf of Egina; Boeotia, north of Megaris and Attica; Locri Opuntii,

north of Boeotia; Phocis, on the Corinthian Gulf, west of Boeotia; Locri Epicnemidii, north of Phocis; Locri Ozolæ, on the Corinthian Gulf, west of Boeotia; Doris, between the Locri Ozolæ and Thessaly; Aetolia, on the Gulf of Patras; Acarnania, west of Aetolia.

DIVISIONS OF THESSALIA.—The Aeniānes and Malien-ses, in the south; Phthiōtis, in the south-east; Dolopia, in the south-west; Thessaliōtis, in the middle; north of the last, Pelasgiōtis; Magnesia, on the east coast; Eseriæōtis, in the north and north-west; and Perrhaebia, between the latter and the left bank of the Peneus (Salembria).

DIVISIONS OF EPIRUS.—In the west, Thesprotia and Chaonia, both adjoining the Ionian Sea; inland, Molossis.

MOUNTAINS, &c., OF THE PELOPONNESUS.—Taygētus, Pendactylon, in Laconia; Cyllene, and Erymanthus, in Arcadia.—**RIVERS.** Crathis and Styx, in Achaia; Peneus, in Elis; Alpheus, the Rourphia, in Arcadia and Elis; Eurōtas, in Laconia.—**CAVES.** Taenārus prom., Cape Matapan; Malea prom., Cape St Angelo; Scyllaeum prom., Cape Skylo.—**MOUNTAINS, &c. in Graecia propria, Thessaly, and Epirus.** Laurium, Hymettus, and Pentelīcus, in Attica; Cithæron and Helicon, in Boeotia; Parnassus, in Phocis; Pin-dus, between Thessaly and Epirus; Othrys and Oeta, in the south of Thessaly; Pelion and Ossa, in the east; and in the north, Olympus.—**RIVERS.** Cephīsus Major, the Mavronero, in Doris, Phocis, and Boeotia, flowing into Lake Copias; the Achelōus, the Aspropotamo, between Acarnania and Aetolia; Sperchius, the Ellada, in the south of Thessaly; Peneus, the Salembria, flowing north-east through Thessaly.—Sunium prom., south of Attica, Cape Colonna.

MACEDONIA (Part of ROUMELIA).

BOUNDARIES.—North, Moesia; East, Thrace; South, the Aegean Sea and Thessaly; west, Illyris Graeca. The latter was included by the Romans in Macedonia.

DIVISIONS.—Pieria, next to Thessaly; westward, Elymiōtis; Bottiaea, north of Pieria; beyond this, Emathia; eastward, Mygdonia; Lyncestis, Pelagonia, and Paenonia, in the interior; Syntīce and the Bisaltæ, west of the Strymon; Chalcidīce, south of Mygdonia, including the peninsulas of Pallēne or Phlegra, Sythonia, and Acte; the Edōnes, east of the Strymon.—**MOUNTAINS.** Mons Orbēlus, in the north; Mons Athos, Monte Santo, in Acte.—**GULFS.** Thermaicus Sinus, the Gulf of Saloniki; Toronaicus Sinus, the Gulf of Cassandra; Singiticus Sinus, the Gulf of Monte Santo; Strymonicus Sinus, the Gulf of

Contessa.—RIVERS. The *Axius* or *Vardari*, and *Haliacmon*, falling into the *Thermaic Gulf*; and the *Strymon*.

THRACIA (THRACE). Part of ROUMELIA.

BOUNDARIES.—North, *Moesia*; east, the *Euxine* and the *Thracian Bosphorus*; south, the *Propontis*, the *Hellespont*, and the *Aegean Sea*; west, *Macedonia*.—Inhabited by the *Bistōnes* and *Cicōnes*, on the coast; inland, by the *Odrysae*, *Bessi*, &c.—PENINSULA. The *Chersonēsus*, north of the *Hellespont*

PRINCIPAL ISLANDS OF GREECE.

1. *In the Ionian Sea*.—*Corcȳra*, *Corfu*; *Leucadia*, *Santa Maura*; *Ithāca*, *Teaki*; *Cephalenia* or *Same*, *Cephalonia*; *Zacynthus*, *Zante*. 2.—*Cythēra*, *Cerigo*, south of *Greece*, and *Aegina*, in the *Gulf of Egina*. 3. *On the east of Greece*.—*Euboea*, *Negropont*; *Scyros*, *Skyro*. 4. *On the coast of Thrace*.—*Thasus*, *Thaso*; *Samothrāce*, *Samothraki*. 5. *Near the Asiatic coast*.—*Lemnos*; *Tenēdos*; *Lesbos*, *Metelin*; *Chios*, *Scio*; *Samos*; *İcāros*, *Nicaria*; *Patmos*; *Leros*; *Cos*, *Stanco*; *Rhodus*, *Rhodes*; *Carpāthus*, *Scarpanto*. 6.—The *CYCLADES*, &c. 7.—*Creta*, *Candia*; with *Mons Ida*, and *Mons Dictē*.

MOESIA (SERVIA and BULGARIA).

BOUNDARIES.—North, the *Danube*; east, the *Black Sea*; south, *Mount Haemus*; west, *Illyricum*.—DIVIDED INTO *Moesia Superior*, in the west; and *Moesia Inferior*, in the east.—RIVER. *Danubius*, here called *Ister*, the *Danube*.

DACIA AND SARMATIA EUROPAEA.

(Countries beyond the DANUBE).

DACIA included *Transylvania*, *Walachia*, *Moldavia*, and *Bessarabia*; and had on the north, *Mons Carpātes* or *Alpes Bastarnicae*, the *Carpathian Mountains*. The leading rivers were *Tibiscus*, the *Theiss*, the western boundary, and the *Porāta*, *Hierāsus*, or *Pruth*.

SARMATIA EUROPAEA included the countries between the *Black Sea*, *Sea of Asov*, *Tyras*, the *Dniester*, and *Tanais*, the *Don*. Its leading rivers were, *Borysthēnes*, the *Dniester*, and *Hypānis*, the *Bog*. In the south, *Chersonēsus Taurica*, now the *Crimea*.

BRITANNIA OR ALBION (BRITAIN).

DIVISIONS.—The part of *Britain* possessed by the *Romans* was first divided into *Britannia Superior*, comprehending *Wales*, and *Britannia Inferior*, including the rest of *England* south of the *Tyne* and *Solway*. Afterwards, the whole

of what they occupied, from the English Channel, was divided into five parts, the limits of which are not exactly known: Britannia Prima, England south of the Thames and British Channel; Britannia Secunda, the country west of the Dee and Severn; Flavia Caesariensis, England from the Thames to the Humber and the Mersey; Maxima Caesariensis, from the latter to the Tyne and Solway; Valentia, from the Tyne and Solway to the Forth. The Vallum Antonini, or Rampart of Antoninus, extended from Dumbarton on the Clyde to the Forth: the Vallum Hadriani, or Rampart of Hadrian, from the Solway Frith to near Newcastle-on-Tyne.

RIVERS, &c.—Tamēsis, the Thames; Sabrīna, the Severn; Abus, the Humber; Tina, the Tyne; Itūna, the Eden; Itūnae Aestuarium, the Solway Frith; Deva, the Dee, in Galloway; Tueda, the Tweed; Bodotria or Boderia, the Forth; Glota, the Clyde; Taus, the Tay.—Vectis, the Isle of Wight; Cassiterīdes, the Scilly Islands, or Lizard Point and Land's End; Mona of Tacitus, Anglesea; Mona of Caesar, Isle of Man; Hibernia, Ireland; Ebūdes, the Hebrides.

LEADING TRIBES.—Cantii, in Kent; Trinobantes, in Middlesex and Essex; Icēni or Simōni, in Suffolk and Norfolk; Silūres, in South Wales; Ordovices, in North Wales; Brigantes, between the Humber and the Solway; Caledonii, north of the Forth and Clyde.

GERMANIA (GERMANY).

BOUNDARIES.—The Rhine, the Baltic, the Vistula, and the Danube.—PRINCIPAL TRIBES.—The Frisii, in Friesland; Bructēri, between the Rhine and the Ems; the Sicambri, on the left bank of the Rhine; the Tenctēri, opposite to Cologne; the river, the Cherusci and Chauci; the Hermundūri, towards the Elbe; in Bohemia, the Boii; the Suevi, between the Elbe and the Vistula; the Longobardi, on the Spree, who afterwards settled in the north of Italy; Burgundiōnes, on the Warta, who removed to Burgundy; the Vindili, Vandals, in Mecklenburg; Saxōnes and Angli, in Holstein; Cimbri and Teutōnes, in Jutland.

LEADING RIVERS.—Danubius; Rhenus, the Rhine; Visurgis, the Weser; Viadrus, the Oder; Vistūla.

VINDELICIA, RHAETIA, NORICUM, PANNONIA, ILLYRICUM. (Part of BAVARIA and AUSTRIA.)

VINDELICIA extended from the junction of the Danube and the Inn to Lacus Brigantinus (Lake Constance). Its chief rivers were the Danube, Isārus, the Iser, and Aenus, the Inn.—RHAETIA included the eastern cantons of Switzerland and

the Tyrol.—**NORICUM** had the Danube on the north, Vindelicia and Rhaetia on the west, the Alps on the south, and corresponded nearly with Austrian Germany south of the Danube. It was divided into **Noricum Ripense**, adjoining the Danube, and **Noricum Mediterraneum**, towards the Alps.—**PANNONIA** had the Danube on the north and east, Illyricum on the south, Noricum on the west. It was divided by the river *Arăbo*, the *Raab*, into Pannonia Superior on the west, and Pannonia Inferior, on the east of that river.—**ILLYRICUM** had Pannonia on the north, Pannonia and Moesia on the east, the Adriatic and Italy on the west. It was divided into Liburnia in the north, and Dalmatia.

ASIA.

COUNTRIES.—Sarmatia Asiatica, between the Black and Caspian Seas; Colchis, at the east of the Black Sea; Iberia, Georgia; Albania, Daghistan and Shirvan; Asia Minor, Anatolia Caramania, and Roum; Syria, Syria and Palestine; Arabia; Armenia, Armenia with part of Georgia; Mesopotamia, Algesira; Chaldea, Irak Arabi; Assyria, Kurdistan; Media, the north-west of modern Persia; Persia, the south-west of modern Persia; Carmania, Kerman; Gedrosia, Mekran; Aria, part of Khorasan and Candahar; Hyrcania and Parthia, Persia south-east of the Caspian; Bactriana, part of Cabul; Sogdiana, Bokhara, in Western Turkestan; India intra Gangem, Hindostan; India extra Gangem, Chino-Indian States; Scythia, Tartary.

SEAS AND GULFS.—Sinus Arabicus, the Red Sea; Dirae, the Straits of Babelmandeb; Mare Erythraeum, the Arabian Sea; Sinus Persicus, the Persian Gulf; Gangeticus Sinus, Bay of Bengal; Mare Hyrcanum or Caspium, Caspian Sea.—**ISLANDS.** Cyprus, in the Levant; Taprobane, Ceylon.

COUNTRIES BETWEEN THE BLACK AND CASPIAN SEAS.

SARMATIA ASIATICA extended between the Rha or Volga, the Don, the Black Sea, and north-west of the Caspian Sea and Mons Caucasus, which bounded it on the south.—**COLCHIS**, now Mingrelia, south of Mons Caucasus, at the south-east angle of the Black Sea. Principal river, the Phasis or Faoz.—**IBERIA**, or Georgia, lay to the east of Colchis, communicating with Sarmatia by the defile called *Pylae Caucasiae*, or *Tartar Gates*; watered by the *Cyrus* or *Kour*.—**ALBANIA**, the modern Daghistan and Shirvan.

ARMENIA MAJOR (ARMENIA and part of GEORGIA).

This country lay between Colchis, Iberia, and Albania on the north, and Media, Assyria, and Mesopotamia on the south.—**RIVERS.**—Araxes or Aras, Euphrātes, Arsanias, and Tigris.—Mount Ararat in the east.

ASIA MINOR (ANATOLIA, CARAMANIA, and ROUM).

BOUNDARIES.—North, the Black Sea; east, Armenia, Mesopotamia, and Syria; south, the Levant; west, the Archipelago and Sea of Marmora.

DIVISIONS.—On the north side, Pontus, Paphlagonia, and Bithynia;—on the west side, Mysia, south of the Propontis, including Troas or Phrygia Minor, and Aeolis; south of Mysia, Lydia or Maeonia; in the south-west, Caria, including Doris, and a small part of Ionia; adjoining the Levant, Lycia and Pamphylia, with Pisidia and Isauria inland; and Cilicia, including C. Trachēa, and C. Campestris;—in the interior, Phrygia Major with Lycaonia; Galatia;—Cappadocia, adjoining Syria, and Armenia Minor, both on the east side.

MOUNTAINS.—Olympus, in the west of Bithynia; Ida, in Troas; Taurus, extending east from Pisidia.

GULFS, &c.—On the coast of Mysia, Adramyttēnus Sinus; Smyrnaeus Sinus, on the coast of Ionia.

CAVES.—Rhaetēum and Sigēum, at the mouth of the Hellespont; Trogilium prom., Cape St Mary; Sacrum prom., Cape Chelidonia, in Lycia.

RIVERS.—The Granicus or Ousvola, in Mysia, flowing into the Sea of Marmora; the Scamander or Xanthus, the Menderē, in Mysia, flowing into the Hellespont, with the Simois on its right bank; the Hermus or Sarabat, with its tributary, the Pactōlus, the Cäyster, and the Maeander, falling into the Aegean Sea.

SYRIA (SYRIA and the HOLY LAND).

BOUNDARIES.—North, Amanus and Taurus mountains; east, the Euphrates and Arabia; south, Arabia; west, the Mediterranean.

DIVISIONS.—1. Syria Propria, including Commagēne, Seleucia, Coelesyria, and other districts; 2. Phoenicia; 3. Palaestina or the Holy Land.

DIVISIONS OF PALESTINE.—1. In the north, Galilaea, divided into Galilaea Superior, or Galilee of the Gentiles, and Galilaea Inferior, or Lower Galilee; 2. In the middle, Samaria; 3. In the south, Judaea; 4. In the east, Regio trans Jordānem, including Batanaea or Bashan, and Peraea. On the north-east of Batanaea were the Syrian districts of Trachonitis, Ituraea, and Ammonitis.

MOUNTAINS.—Cassius Mons, in Syria Propria; Lebānon, divided into Libānus on the west, and Antilibānus on the east, enclosing the vale of Coelesyria; Hermon, the south part of Antilibanus; Carmel, on the coast, between Galilee and Samaria; in Galilaea, Itabyrius or Mount Tabor; in Peraea, Gilead, Abārim, and Pisgah.

WATERS.—The river Orontes, or El Asi, from Antilibanus, flows north and west into the Mediterranean; the Leontes flows south-west through the vale of Coelesyria into the Mediterranean; the river Jordānes, or Jordan, flows from Hermon south into the Lake of Tiberias or Gennesāret, the Sea of Galilee, then south into the Lacus Asphaltites or Mare Mortuum, the Dead Sea.

ARABIA.

BOUNDARIES.—North, Syria, and Chaldea; east, the Persian Gulf; south, the Arabian Sea; west, the Red Sea and Egypt.

DIVISIONS.—Arabia Petraea, extending from Peraea to the western branch of the Red Sea; Arabia Felix, on the west and south; Arabia Deserta, on the east. East of the Dead Sea, Moabitis, the country of the Moabites; south of Judaea, Idumaea, the country of the Edomites. The Nabathaei and Sabaei lived on the coasts of the Red Sea.

MESOPOTAMIA, ASSYRIA, AND BABYLONIA.

MESOPOTAMIA, now Algesira, lay between the Tigris and the Euphrates; **ASSYRIA**, now Kurdistan, between the Tigris and Media; and **BABYLONIA** or **CHALDEA**, now Irak Arabi, from the south of Mesopotamia to the mouths of the Euphrates and Tigris on the Persian Gulf. The northern part of Mesopotamia, called Padan-Aram in Scripture, was divided into Osroëne in the north-west, and Mygdonia in the north-east. The principal divisions of Assyria were Aturia in the north, Adiabēne in the middle, Sittacēne in the south.—**RIVERS.** The Euphrates, the Tigris, and the Lycus (or Zab).

MEDIA AND PERSIA.

MEDIA, now Azerbaijan, Irak, and Mazanderan, extended from the Caspian Sea to Persia and Assyria. After the time of Alexander, its divisions were Atropatēne in the north, and Media Magna.

PERSIA was divided into Susiana or Cissia in the north, and Persis Propria in the south.—**SUSIANA**, now Khusistan, extended along the east side of the Tigris, from Assyria to the Persian Gulf.—**Persis Propria**, now Fars, extended from *Susiana* to Carmania, and from Media to the Persian Gulf.

In the other parts of Asia, notice SCYTHIA, divided by the *Imāus*, a branch of the Altaian Mountains into Scythia intra-

Imāum on the north, and Scythia extra Imāum on the east and south; Paropamisus, or Indian Caucāsus, now the Hindoo Coosh; the Emōdi Montes or Himmalaya Mountains; Hydaspes, the Jelum; Acesines, the Chenaub; Hydraōtes, the Ravee; Hyphāsīs, the Ghara.

AFRICA.

COUNTRIES.—Aegyptus, Egypt; Libya, Barca; Tripolitāna, Tripoli; Africa Propria, Tunis; Numidia, Eastern Algiers; Mauretania, Western Algiers, Fez, and Morocco; Aethiopia supra Aegyptum, Nubia and Abyssinia; Libya Inferior, the countries on the south of Barbary.

WATERS, &c.—Syrtis Minor, the Gulf of Cābes; Syrtis Major, the Gulf of Sidra; Hermaeum or Mercurii prom., Cape Bon;—Insulae Purpurariae, supposed to be the Madeira; Insulae Fortunatae, the Canaries.

AEGYPTUS (EGYPT).

BOUNDARIES.—North, the Mediterranean Sea; east, Arabia and the Red Sea; south Ethiopia; west, the Deserts of Libya.

RIVER.—Nilus, the Nile, traverses the whole of Egypt, and divides, fifteen miles below Cairo, into two branches, which, receding from each other, enclose a triangular portion of land, called the Delta. Formerly it had seven mouths.—DIVISIONS.

—1. Aegyptus Superior, extending from Syene on the frontiers of Ethiopia to Memphis near the apex of the Delta, subdivided into Thebāis, the upper part, and Heptanōmis, the lower—2. Aegyptus Inferior, including the Delta and the districts on each side of it.—LAKES. Lacus Mareōtis, near the western mouth of the Nile; Lacus Moeris, Birket Keroun, in Heptanomis, west of the Nile.—ISLAND. Pharos, near Lake Mareotis.

OTHER COUNTRIES OF AFRICA.

LIBYA, between Egypt and Syrtis Major, including Marmarica and Cyrenaica, also called Pentapōlis, from its five cities; in the south-west is the Ammonian Oasis.

TRIPOLITANA, between Syrtis Major and Syrtis Minor.—RIVER.—The Cinyphus or Cinyps; on the western coast of Tripolitana, the Lotopophāgi or lotus-eaters.

AFRICA PROPRIA, or Tunis, was divided into Byzacium or Emporium in the south, and Zeugitāna in the north; in Zeugitana, west of Carthage, the river Bagrādas.

NUMIDIA, Algiers, extending west to the river Ampsāgas, inhabited by the Massyli and Massaesyli.

MAURETANIA, Morocco, &c., the country of the Maurior Moors, divided into Mauretania Caesariensis in the east, and M. Tingitāna in the west. On the south of Mauretania Mons Atlas; south of it the Gaetuli; east, the Garamante

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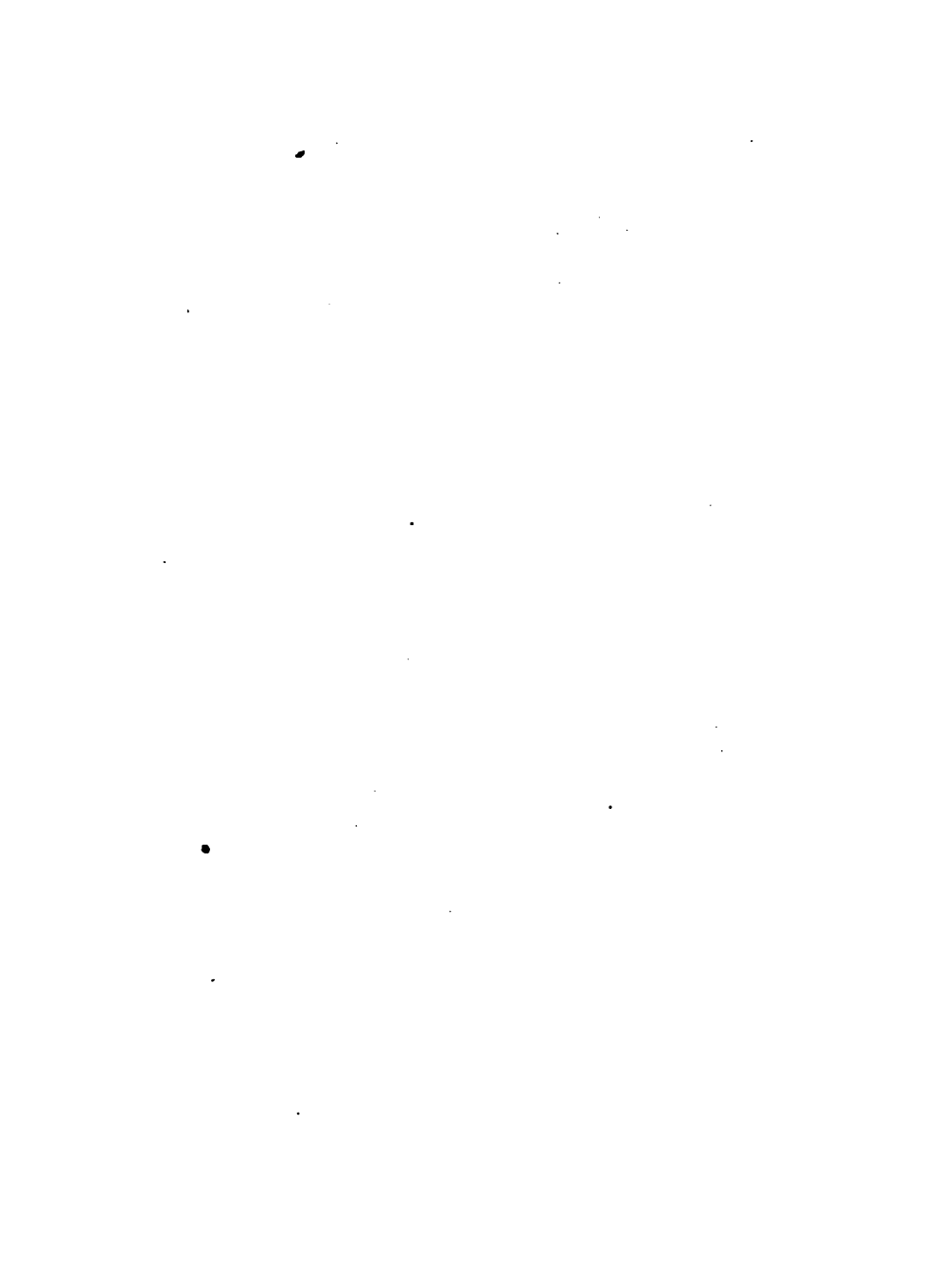
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